Actiontec®

Wireless DSL Gateway

Model #: GT704WG-QW04

Firmware Version: QW04-3.60.2.0.6.3-GT704-WG

User Manual

Ver 1.0

Solutions for the Digital Life™

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Introduction 1

Thank you for purchasing the Actiontec 54 Mbps Wireless DSL Gateway. The Gateway is the simplest way to connect computers to a high-speed broadband connection. This easy-to-use product is perfect for the office or small business. If you want to take your computing to the next level, the Actiontec 54 Mbps Wireless DSL Gateway is sure to be one of the keys to your success.

Package Contents

- Actiontec 54 Mbps Wireless DSL Gateway
- Power cord
- Phone filters
- DSL cable
- Ethernet cable
- USB cable
- Utilities CD-ROM
- Quick start guide

Minimum System Requirements

- Active DSL service
- Computer with an 10 Mbps or 10/100 Mbps Ethernet connection, or USB

connection

- Microsoft Windows 98 Second Edition (SE), Windows Millennium Edition (Me), Windows NT 4.0, Windows 2000, Windows XP, Mac OS 7.1+, Mac OS 8.0+, Mac OS 9.0+, or Mac OS X+

  Note: USB LAN port is not supported with Microsoft Windows 95, Windows NT 4.0, and Mac OS.

- Internet Explorer 5.0 or higher (6.x recommended) or Netscape Navigator 4.0 or higher (4.7 recommended)

- TCP/IP network protocol installed on each computer

Features

- Plug-and-Play installation support for systems with Windows operating systems (98, 98SE, Me, 2000, and XP)

- ADSL WAN port (RJ-11)

- Compliant with full-rate ANSI T1.413 Issue 2, ITU G.992.1 (G.dmt) and G.992.2 (G.lite) standard

- Auto-handshake for different ADSL flavors

- USB 1.1 device specification compliance

- 12 Mbps USB data rate (full speed)

- Multiprotocol Encapsulation over ATM, PPP over ATM, PPP over Ethernet

- Precise ATM traffic shaping

- IP packet routing and transparent bridging

- Routing protocol supports RIP-1, RIP-2, static routing

- Built-in NAT, DHCP server

DNS relay support

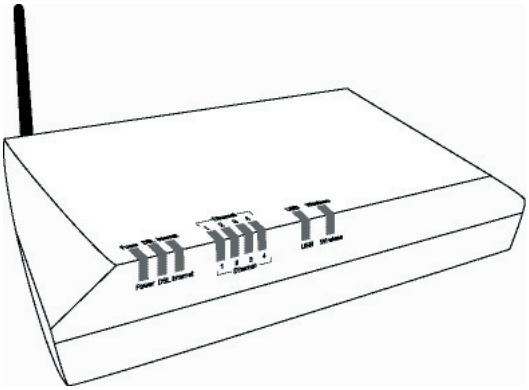
- PAP/CHAP authentication, administrative passwords through Telnet and HTTP
- 64-, 128-, and 256-bit WEP/WPA wireless LAN security
- Compliant with IEEE 802.3 Ethernet standard
- 10/100 Base-T Ethernet ports (4)
- Flow control support for Fast Ethernet
- Web-based configuration setup
- Default configuration backup restore
- FTP upgradeable
- Web download support
- 802.11b/g support

Getting to Know the Gateway

This section contains a quick description of the Gateway's lights, ports, etc. The Gateway contains several indicator lights (LEDs) on its front panel and a series of ports on its rear panel.

Front Panel

The front panel of the Gateway features nine lights: Power, DSL, Internet, Ethernet (4), USB, and Wireless.



Power Light

The Power light displays the Gateway's current status. If the Power light glows steadily green, the Gateway is receiving power and fully operational. When the Power light flashes rapidly, the Gateway is initializing. If the Power light is not illuminated when the Power cord is plugged in and the Power switch is turned on, the Gateway has suffered a critical error and technical support should be contacted.

DSL Light

The DSL light illuminates when the Gateway is connected to a DSL (Digital Subscriber Line) line. When it flashes, the Gateway's built-in DSL modem is training for DSL service.

Internet Light

When the Internet light glows steadily, the Gateway is connected to the DSL provider.

Ethernet Lights

The Ethernet lights illuminate when the Gateway is connected via one or more of its Ethernet ports.

USB Light

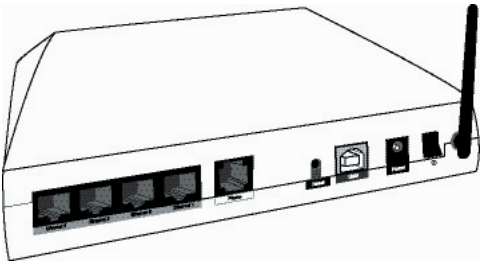
The USB light illuminates when the Gateway is connected via its USB port.

Wireless Light

The Wireless light illuminates when the Gateway is activated for wireless use.

Rear Panel

The rear panel of the Gateway contains seven ports (Ethernet [4], Phone, USB, and Power), as well as Reset and Power switches.



Phone Port

The Phone port is used to connect the Gateway to a DSL connection.

USB Port

The USB port is used to connect a computer to the Gateway via USB cable.

Ethernet Ports

The Ethernet ports are used to connect computers to the Gateway via Ethernet cable. The Ethernet ports are 10/100 Mbps auto-sensing ports, and either a straight-through or crossover Ethernet cable can be used when connecting to the ports.

Reset Switch

Depressing the Reset switch for one or two seconds will power cycle the Gateway (similar to unplugging and then plugging in the Gateway's Power cord). To restore the Gateway's factory default settings, depress and hold the Reset switch for approximately 10 seconds. The reset process will start about 10 seconds after releasing the switch.

Power Port

The Power port is used to connect the Power cord to the Gateway.

Warning: Do not unplug the Power cord from the Gateway during the reset process. Doing so may result in permanent damage to the Gateway.

Power Switch

The Power switch is used to power the Gateway on and off.

Technical Support

Basic Setup Support

If unable to access the Internet, look at the Internet light on the front of the Gateway. If the light is **solid green**, call the ISP immediately. If it is **not solid green**, call Qwest at 1-800-247-7285

Other Problems

Contact the ISP if experiencing problems with:

- DHCP addressing configuration
- Static IP addressing configuration
- Transparent bridging configuration

Contact Qwest at 1-800-247-7285 for:

- DSL service outage support and repair
- DSL service installation support

Note: Before attempting any of the above, make sure access to the Internet is available.

Advanced Feature Support

Qwest DSL technical support provides the following advanced feature support for the Actiontec DSL Gateway. Contact Qwest at 1-800-247-7285 for configuration assistance.

- Enabling Website Blocking
- Enabling VPN Pass-Through
- Enabling/Disabling NAT
- Firewall configuration
- Changing the LAN IP address of the DSL Gateway
- Enabling Services Blocking
- Enabling/Disabling DHCP
- VIP feature

These features are supported in the Gateway only. Implementation of the above features within the network (LAN) is not supported.

Wired/Wireless Upgrade

Wired and wireless upgrade installation support is available from Actiontec free of charge if the wired/wireless equipment was purchased from Actiontec. Contact Actiontec at 1-888-436-0675 for installation and configuration support information.

Networking (LAN) Support

If a wired/wireless network has been set up and support is needed in one of the following areas:

- LAN support of multiple computers and peripherals
- Microsoft Windows Networking

- Microsoft Internet Connection Sharing (ICS)
- Advanced LAN configuration with multiple computers
- Non-Actiontec-provided network card/Ethernet cable installation, configuration, or troubleshooting
- Commercial firewall software configuration

contact the **Actiontec Pay For Support Center** at 1-888-825-9025. Actiontec networking support is provided for a fee of $29.95 per incident. Other fee-based feature support includes:

- Port Forwarding (Static NAT)
- Static Routing
- MAC Address Cloning
- Third-party vendor wireless equipment configuration
- DMZ Hosting
- NAT Routes
- RIP (Dynamic Routing)

This support service does not include an on-site field technician.

To purchase Actiontec wireless cards and peripherals, visit the Actiontec Web site at **www.actiontecstore.com/qwest**

Performing a Basic Setup

2

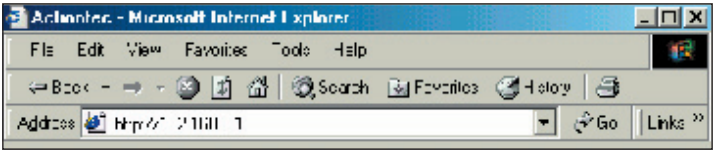
This chapter is a guide through a basic setup of the Gateway. The Basic Setup includes instructions on how to connect the Gateway to the ISP and changing the user name and password allowing access to the Web Configuration screens.

To complete a basic setup, the user will need information provided by the ISP. This information is sometimes contained in a welcome letter or ISP worksheet. If this document is not available, contact the ISP immediately and request one.

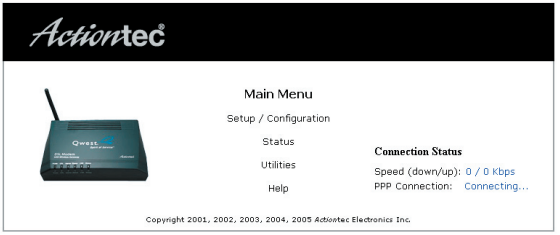
Basic Setup

To configure the Gateway for basic operation:

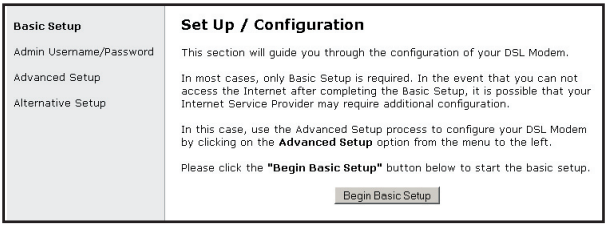
1. Open a Web browser. In the "Address" text box, type
   `http://192.168.0.1`
   then press **Enter** on the keyboard.



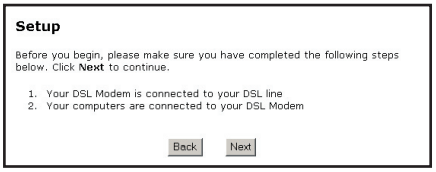
2. The "Main Menu" screen appears. Select **Setup/Configuration**.



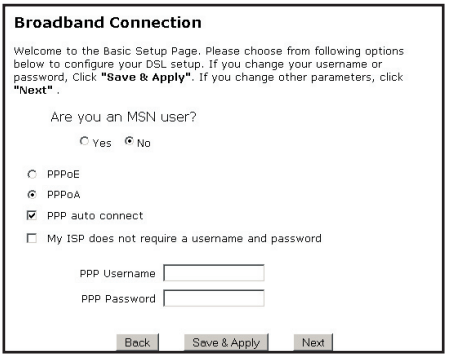
3. Follow the instructions in the "Set Up/Configuration" screen, then click **Begin Basic Setup**.


Basic Setup
Admin Username/Password
Advanced Setup
Alternative Setup
Set Up / Configuration
This section will guide you through the configuration of your DSL Modem.
In most cases, only Basic Setup is required. In the event that you can not access the Internet after completing the Basic Setup, it is possible that your Internet Service Provider may require additional configuration.
In this case, use the Advanced Setup process to configure your DSL Modem by clicking on the Advanced Setup option from the menu to the left.
Please click the "Begin Basic Setup" button below to start the basic setup.
Begin Basic Setup

4. In the next window, follow the on-screen instructions, then click **Next**.


Setup
Before you begin, please make sure you have completed the following steps below. Click Next to continue.
1. Your DSL Modem is connected to your DSL line
2. Your computers are connected to your DSL Modem
Back
Next

5. In the next screen, indicate whether the user is using MSN (Microsoft Network) by clicking in the appropriate circle. Then, select the type of connection provided by the ISP by clicking in the circle next to **PPPoA** or **PPPoE.** If unsure about the selection, check the information provided by the ISP. Finally, enter the **User Name** and **Password** provided by the ISP.

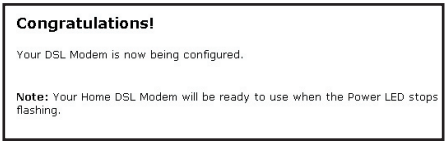

Broadband Connection
Welcome to the Basic Setup Page. Please choose from following options below to configure your DSL setup. If you change your username or password, Click "Save & Apply". If you change other parameters, click "Next" .
Are you an MSN user?
Yes
No
PPPoE
PPPoA
PPP auto connect
My ISP does not require a username and password
PPP Username
PPP Password
Back
Save & Apply
Next

Note: If you obtained a block of static IP addresses, see Chapter 4, "Advanced Setup," to configure the Gateway.

6. Click **Save and Restart** in the "Save and Restart" screen.

Save and Restart
Please click the Save and Restart button below to save your settings and restart your DSL Modem.
Save and Restart

7. The "Congratulations" screen appears. The Gateway is successfully configured.

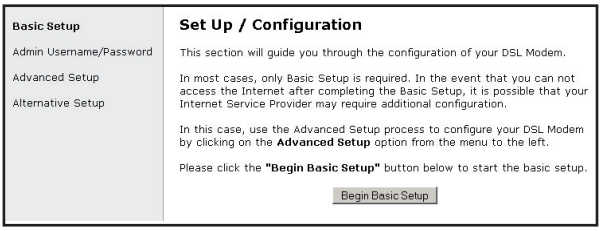

Congratulations!
Your DSL Modem is now being configured.
Note: Your Home DSL Modem will be ready to use when the Power LED stops flashing.

The Power light flashes rapidly while the Gateway restarts, then glows steadily green when fully operational. The Internet light will also glow steadily green. The Gateway is now configured and users can start surfing the Web.
If an error stating the Web browser was unable to connect to the Internet appears, check the configuration settings. Ensure all the information required by the ISP is entered correctly.

Changing the User Name and Password

To create or change the user name and password controlling access to the Gateway's Web Configuration screens, follow these instructions:

1. From the Setup/Configuration screen, select **Admin Username/Password** from the menu on the left side.


Basic Setup
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Alternative Setup
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In this case, use the Advanced Setup process to configure your DSL Modem by clicking on the Advanced Setup option from the menu to the left.
Please click the "Begin Basic Setup" button below to start the basic setup.
Begin Basic Setup

2. The "Change Admin Username/Password" screen appears. Enter a new user name (optional) in the "New Username" text box, then a password in the "New Password" text box. Re-enter the password in the "Re-enter New Password" text box. Make sure to write the user name and password down and keep them in a secure location. They will be needed to access to the Gateway's Web Configurations screens in the future.

Change Admin Username/Password
New Username
admin
New Password
Re-enter New Password
Please click the Save and Restart button below to save your settings and restart your DSL Modem.
Save and Restart

3. Click "Save and Restart" at the bottom of the screen.

4. The "Save and Restart" screen appears. Click "Save and Restart" to save the settings changed in the Change Admin Username/Password screen.

Save and Restart
Please click the Save and Restart button below to save your settings and restart your DSL Modem.
Save and Restart

Once the Gateway has rebooted, the password is active. To access the Gateway's Web Configuration screens in the future, the username and password must be entered.

Setting Up Static IP Address

3

This chapter details how to set up the Gateway with a static IP address. The first section explains the configuration using a single static IP address; the second section explains the configuration using a block of static IP addresses.

Configuring for a Single Static IP Address

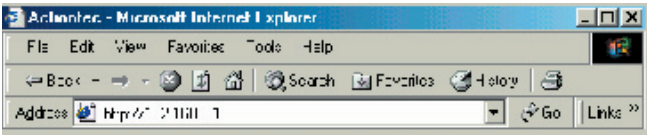
To set up the Gateway to use a single static IP address:

> ***Note***: To complete this procedure, you must have access to the Internet Service Provider (ISP) worksheet. If no worksheet has been provided, contact the ISP.

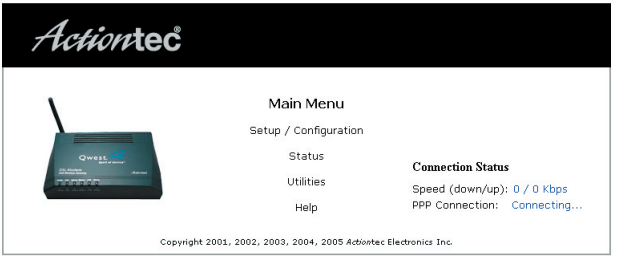
1. Open the Web browser. In the address bar enter:

`http://192.168.0.1`

then press **Enter** on the keyboard.

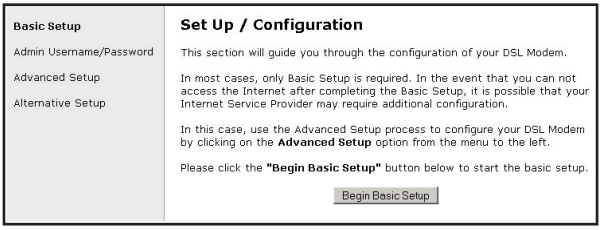


2. The "Main Menu" screen appears. Select **Setup/Configuration**.



> ***Note***: If the Main Menu screen does not appear, make sure the Ethernet cable is properly connected.

3. In the "Set Up/Configuration" screen, select **Alternative Setup** from the menu on the left side.


Basic Setup
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Advanced Setup
Alternative Setup
Set Up / Configuration
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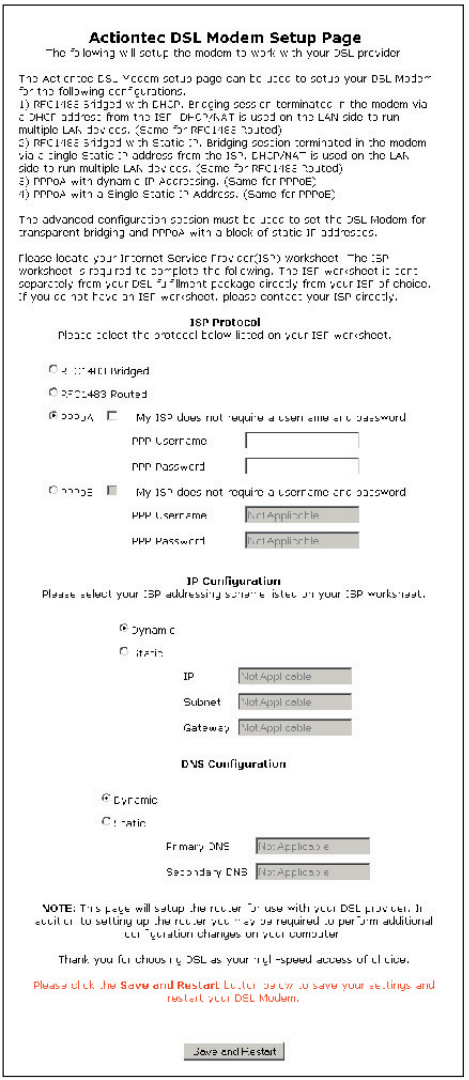
In most cases, only Basic Setup is required. In the event that you can not access the Internet after completing the Basic Setup, it is possible that your Internet Service Provider may require additional configuration.
In this case, use the Advanced Setup process to configure your DSL Modem by clicking on the Advanced Setup option from the menu to the left.
Please click the "Begin Basic Setup" button below to start the basic setup.
Begin Basic Setup

4. The "Actiontec DSL Gateway Setup Page" screen appears. Using the Internet Service Provider (ISP) worksheet, enter the following information: ISP Protocol (select **RFC1483 Bridged**, **RFC1483 Routed**, **PPPoA**, or **PPPoE** by clicking in the appropriate circle), ISP Username, ISP Password (in the appropriate text boxes).



Actiontec DSL Modem Setup Page

The following will setup the modem to work with your DSL provider

The Actiontec DSL Modem setup page can be used to setup your DSL Modem for the following configurations.
1) RFC1483 Bridged with DHCP. Bridging session terminated in the modem via a DHCP address from the ISP. DHCP/NAT is used on the LAN side to run multiple LAN devices. (Same for RFC1483 Routed)
2) RFC1483 Bridged with Static IP. Bridging session terminated in the modem via a single Static IP address from the ISP. DHCP/NAT is used on the LAN side to run multiple LAN devices. (Same for RFC1483 Routed)
3) PPPoA with dynamic IP Addressing. (Same for PPPoE)
4) PPPoA with a Single Static IP Address. (Same for PPPoE)

The advanced configuration section must be used to set the DSL Modem for transparent bridging and PPPoA with a block of static IP addresses.

Please locate your Internet Service Provider(ISP) worksheet. The ISP worksheet is required to complete the following. The ISP worksheet is sent separately from your DSL fulfillment package directly from your ISP of choice. If you do not have an ISP worksheet, please contact your ISP directly.

ISP Protocol

Please select the protocol below listed on your ISP worksheet.

RFC1483 Bridged

RFC1483 Routed

PPPoA — My ISP does not require a username and password

PPP Username

PPP Password

PPPoE — My ISP does not require a username and password

PPP Username — Not Applicable

PPP Password — Not Applicable

IP Configuration

Please select your ISP addressing scheme listed on your ISP worksheet.

Dynamic

Static

IP — Not Applicable

Subnet — Not Applicable

Gateway — Not Applicable

DNS Configuration

Dynamic

Static

Primary DNS — Not Applicable

Secondary DNS — Not Applicable

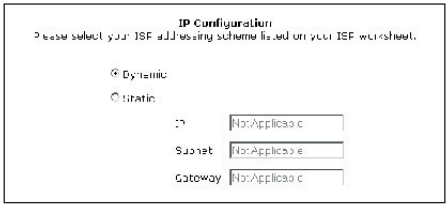
NOTE: This page will setup the router for use with your DSL provider. In addition to setting up the router you may be required to perform additional configuration changes on your computer.

Thank you for choosing DSL as your high-speed access of choice.

Please click the **Save and Restart** button below to save your settings and restart your DSL Modem.

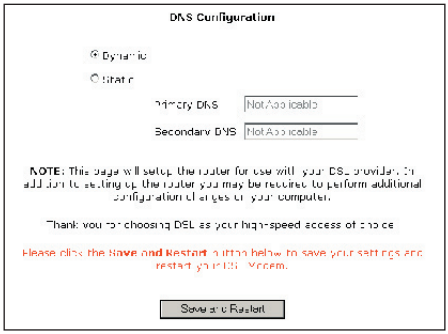
Save and Restart

5. Scroll down to the "IP Configuration" section on the Actiontec DSL Gateway Setup Page screen, click on the circle next to "Static," and enter the IP address obtained from the ISP worksheet in the IP text box.



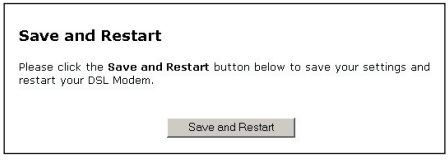
Note: The "Subnet" and "Gateway" text boxes are not used during this procedure.

6. If provided with DNS settings on the ISP worksheet, click the circle next to "Static" and enter the DNS addresses in the "DNS Configuration" section at the bottom of the Actiontec DSL Gateway Setup Page screen.
If no DNS settings were provided, go to step 7.

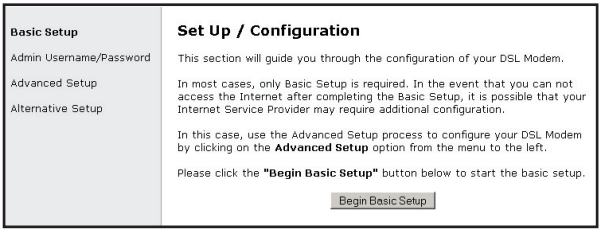


7. Click "Save and Restart" at the bottom of the screen.

8. The "Save and Restart" page appears. Click "Save and Restart" to save the settings changed in the Actiontec DSL Gateway Setup Page screen.


Save and Restart
Please click the Save and Restart button below to save your settings and restart your DSL Modem.
Save and Restart

9. Once the Gateway restarts, return to the Setup/Configuration screen and select **Change Admin Password** from the menu on the left side.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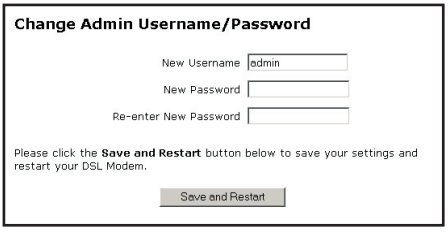
In most cases, only Basic Setup is required. In the event that you can not access the Internet after completing the Basic Setup, it is possible that your Internet Service Provider may require additional configuration.
In this case, use the Advanced Setup process to configure your DSL Modem by clicking on the Advanced Setup option from the menu to the left.
Please click the "Begin Basic Setup" button below to start the basic setup.
Begin Basic Setup

10. The "Change Admin Username/Password" screen appears. Enter a new user name (optional) in the "New Username" text box, then a password in the "New Password" text box. Re-enter the password in the "Re-enter New Password" text box. Make sure to write the user name and password down and keep them in a secure location. They will be needed to access to the Gateway's Web Configurations screens in the future.


Change Admin Username/Password
New Username
admin
New Password
Re-enter New Password
Please click the Save and Restart button below to save your settings and restart your DSL Modem.
Save and Restart

11. Click "Save and Restart" at the bottom of the screen.

12. The "Save and Restart" page appears. Click "Save and Restart" to save the settings changed in the Change Admin Username/Password screen.

Save and Restart
Please click the Save and Restart button below to save your settings and restart your DSL Modem.
Save and Restart

The Gateway has been configured to support a single static IP address. Once the Power light stops blinking, the Gateway is ready for use.

Configuring for a Block of Static IP Addresses

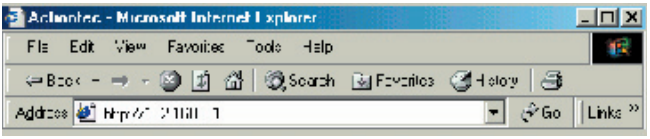
To set up the Gateway to use a block of static IP addresses:

Note: To complete this procedure, you must have access to the Internet Service Provider (ISP) worksheet. If no worksheet has been provided, contact the ISP.

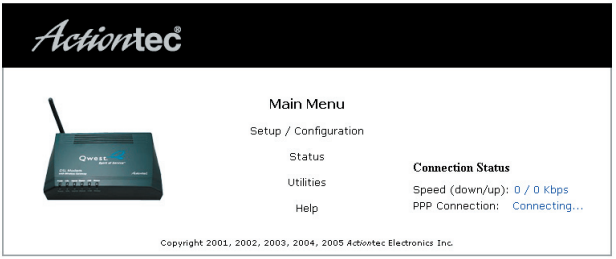
1. Open the Web browser. In the address bar enter:

`http://192.168.0.1`

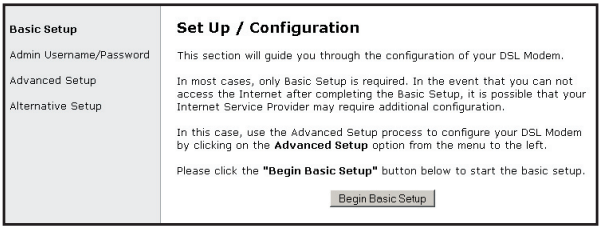
then press **Enter** on the keyboard.



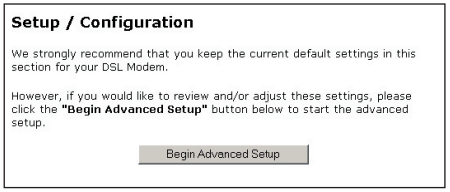
2. The "Main Menu" screen appears. Select **Setup/Configuration**.



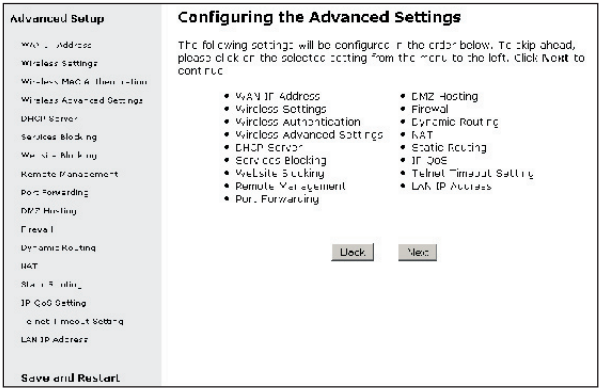
3. In the "Set Up/Configuration" screen, read the instructions, then select **Advanced Setup** from the menu on the left side.


Basic Setup
Admin Username/Password
Advanced Setup
Alternative Setup
Set Up / Configuration
This section will guide you through the configuration of your DSL Modem.
In most cases, only Basic Setup is required. In the event that you can not access the Internet after completing the Basic Setup, it is possible that your Internet Service Provider may require additional configuration.
In this case, use the Advanced Setup process to configure your DSL Modem by clicking on the Advanced Setup option from the menu to the left.
Please click the "Begin Basic Setup" button below to start the basic setup.
Begin Basic Setup

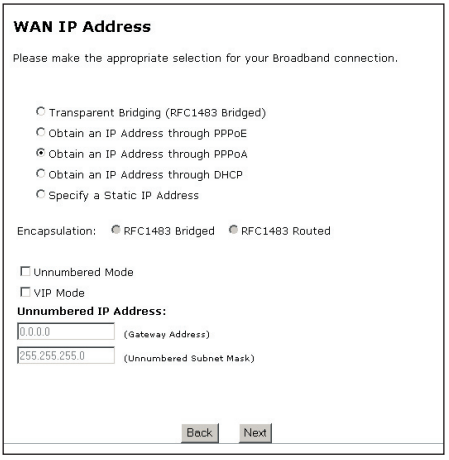
4. Click **Begin Advanced Setup**.


Setup / Configuration
We strongly recommend that you keep the current default settings in this section for your DSL Modem.
However, if you would like to review and/or adjust these settings, please click the "Begin Advanced Setup" button below to start the advanced setup.
Begin Advanced Setup

5. The "Configuring the Advanced Settings" screen appears. Select **WAN IP Address** from the menu on the left side.

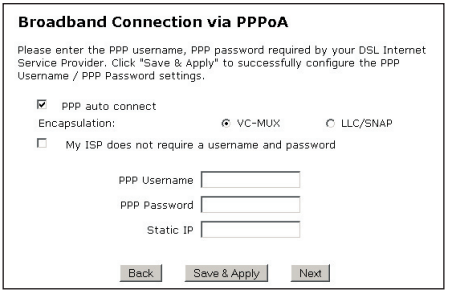


6. Select "Obtain an IP Address through PPPoA," select "Unnumbered Mode," then enter the gateway and subnet mask addresses assigned by the ISP in the "Gateway Address" and "Unnumbered Subnet Mask" text boxes, respectively. These addresses should be included on the ISP worksheet. Click **Next**.

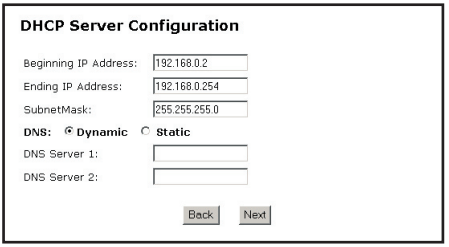


7. A window appears, stating the Gateway needs to rebooted. Reboot the Gateway.

8. After the Gateway reboots, return to the the "Broadband Connection via PPPoA" screen and enter the user name and password assigned by the ISP in the appropriate text boxes, then click **Next** four times.


Broadband Connection via PPPoA
Please enter the PPP username, PPP password required by your DSL Internet Service Provider. Click "Save & Apply" to successfully configure the PPP Username / PPP Password settings.
PPP auto connect
Encapsulation: VC-MUX LLC/SNAP
My ISP does not require a username and password
PPP Username
PPP Password
Static IP
Back
Save & Apply
Next

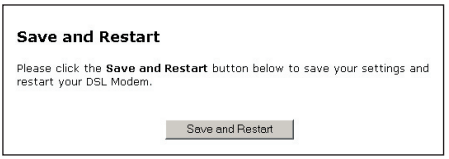
9. In the "DHCP Server Configuration" screen, select "Static" from the "DNS" options near the center of the screen, then enter the DNS Server IP addresses assigned by the ISP in the appropriate text boxes.



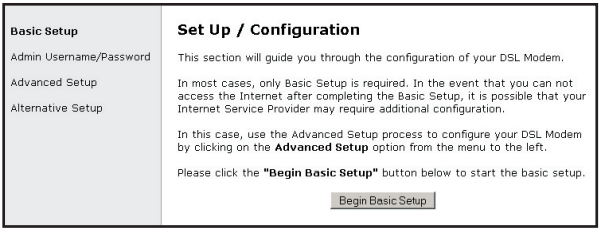
Note: If the ISP did not provide static DNS addresses, leave the DNS option at "Dynamic." Also, if the DHCP server option is turned off, this screen will not appear. The Gateway will obtain dynamically assigned DNS addresses if supported by the ISP with static IP addresses.

10. Click "Save and Restart" from the menu on the left side.

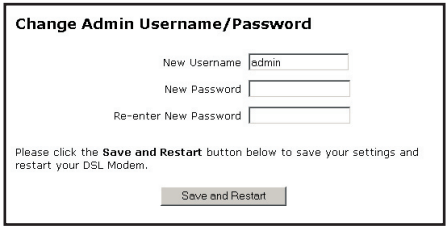
11. The "Save and Restart" page appears. Click "Save and Restart" to save the settings changed in the Actiontec DSL Gateway Setup Page screen.


Save and Restart
Please click the Save and Restart button below to save your settings and restart your DSL Modem.
Save and Restart

12. Once the Gateway restarts, return to the Setup/Configuration screen and select **Change Admin Password** from the menu on the left side.

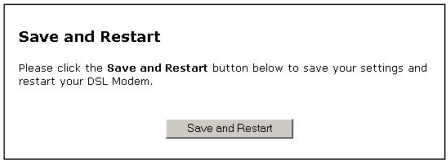

Basic Setup
Admin Username/Password
Advanced Setup
Alternative Setup
Set Up / Configuration
This section will guide you through the configuration of your DSL Modem.
In most cases, only Basic Setup is required. In the event that you can not access the Internet after completing the Basic Setup, it is possible that your Internet Service Provider may require additional configuration.
In this case, use the Advanced Setup process to configure your DSL Modem by clicking on the Advanced Setup option from the menu to the left.
Please click the "Begin Basic Setup" button below to start the basic setup.
Begin Basic Setup

13. The "Change Admin Username/Password" screen appears. Enter a new user name (optional) in the "New Username" text box, then a password in the "New Password" text box. Re-enter the password in the "Re-enter New Password" text box. Make sure to write the user name and password down and keep them in a secure location. They will be needed to access to the Gateway's Web Configurations screens in the future.


Change Admin Username/Password
New Username
admin
New Password
Re-enter New Password
Please click the Save and Restart button below to save your settings and restart your DSL Modem.
Save and Restart

14. Click "Save and Restart" at the bottom of the screen.

15. The "Save and Restart" page appears. Click "Save and Restart" to save the settings changed in the Change Admin Username/Password screen.


Save and Restart
Please click the Save and Restart button below to save your settings and restart your DSL Modem.
Save and Restart

The Gateway has been configured to support a block of static IP addresses. Once the Power light stops blinking, the Gateway is ready for use.

Configuring Advanced Settings

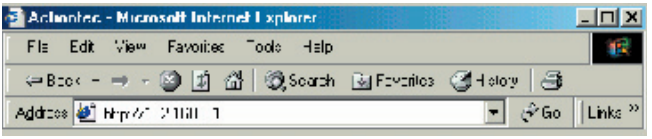
4

This chapter contains information concerning the advanced configuration options of the Gateway, such as wireless settings, remote management, and Web site blocking.

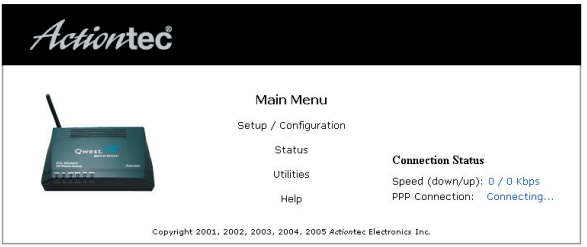
Accessing Advanced Settings

To access the Advanced Settings screens, follow these instructions:

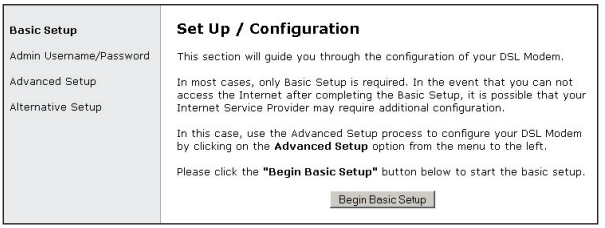
1. Open the Web browser. In the address bar enter:
   `http://192.168.0.1`
   then press **Enter** on the keyboard.



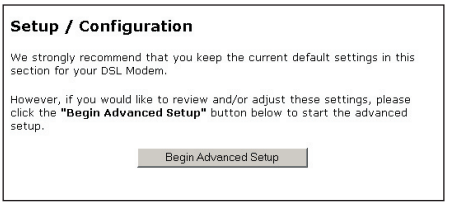
2. The "Main Menu" screen appears. Select **Setup/Configuration**.



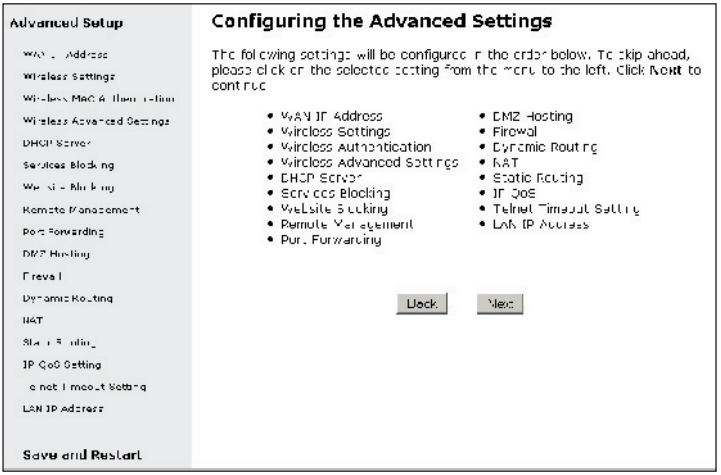
3. In the "Set Up/Configuration" screen, read the instructions, then select **Advanced Setup** from the menu on the left side.


Basic Setup
Admin Username/Password
Advanced Setup
Alternative Setup
Set Up / Configuration
This section will guide you through the configuration of your DSL Modem.
In most cases, only Basic Setup is required. In the event that you can not access the Internet after completing the Basic Setup, it is possible that your Internet Service Provider may require additional configuration.
In this case, use the Advanced Setup process to configure your DSL Modem by clicking on the Advanced Setup option from the menu to the left.
Please click the "Begin Basic Setup" button below to start the basic setup.
Begin Basic Setup

4. In the next screen, read the recommendations. To perform an advanced setup on the Gateway, click **Begin Advanced Setup**.


Setup / Configuration
We strongly recommend that you keep the current default settings in this section for your DSL Modem.
However, if you would like to review and/or adjust these settings, please click the "Begin Advanced Setup" button below to start the advanced setup.
Begin Advanced Setup

5. The "Configuring the Advanced Settings" screen appears. To check all the settings, or if unsure of which settings to modify, select **Next**. To modify a specific configuration, click on its name in the menu on the left.



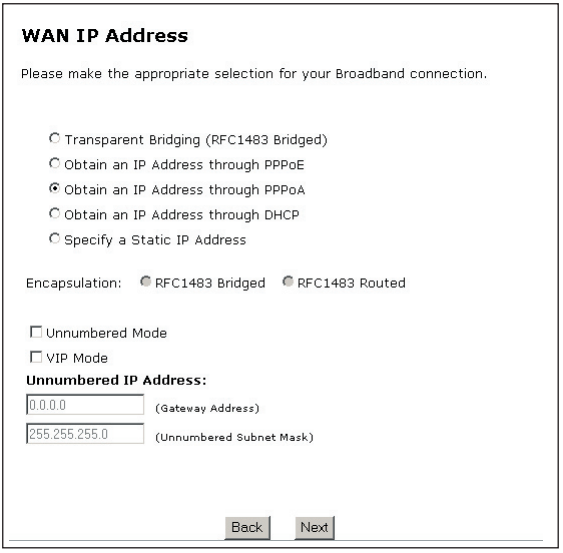
Note: To save changes made in any of the Advanced Settings screens, click **Save and Restart** at the bottom of the menu on the left side of the screen.

WAN IP Address

Selecting **WAN IP Address** in the "Advanced Settings" screen generates the "WAN IP Address" screen. WAN IP Address allows manual set up of the IP address of the Gateway. There are five ways to do this: **Transparent Bridging**, **Obtain an IP Address through PPPoE**, **Obtain an IP Address Through PPPoA**, **Obtain an IP Address through DHCP**, and **Specify a Static IP Address**.

Note: Some DSL providers use PPPoE/PPPoA to establish communication with an end user. If unsure about which connection is present, check with the Internet Service Provider (ISP) before continuing.

After selecting a connection type, click **Next** to continue configuring the connection.

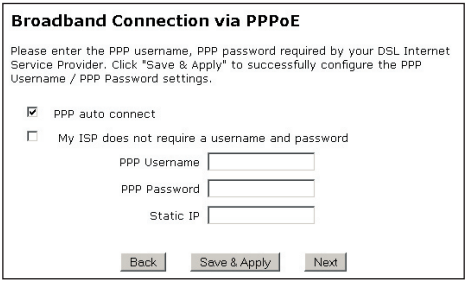


Transparent Bridging

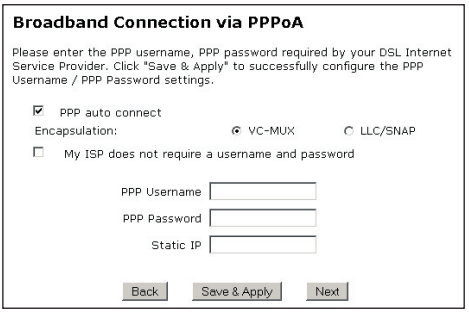
Select this option to use the Gateway as a transparent bridge. This option should only be used if the Gateway is being used solely as a Gateway to connect one computer to the Internet via a DSL connection. When the Gateway is being used as a transparent bridge, it does not provide any firewall security.

Obtain an IP Address through PPPoE or PPPoA

Select one of these options to allow the Gateway to use the Point-to-Point over Ethernet (PPPoE) or Point-to-Point over ATM (PPPoA) protocol.
"**Broadband Connection via PPPoE" screen:**


Broadband Connection via PPPoE
Please enter the PPP username, PPP password required by your DSL Internet Service Provider. Click "Save & Apply" to successfully configure the PPP Username / PPP Password settings.
PPP auto connect
My ISP does not require a username and password
PPP Username
PPP Password
Static IP
Back
Save & Apply
Next

"Broadband Connection via PPPoA" screen:


Broadband Connection via PPPoA
Please enter the PPP username, PPP password required by your DSL Internet Service Provider. Click "Save & Apply" to successfully configure the PPP Username / PPP Password settings.
PPP auto connect
Encapsulation:
VC-MUX
LLC/SNAP
My ISP does not require a username and password
PPP Username
PPP Password
Static IP
Back
Save & Apply
Next

If a **User Name** and **Password** was entered in the Installation Buddy or during Basic Setup, it should be displayed in the "Broadband Connection via PPPoE/PPPoA" screen. If not, enter the information now. If the ISP does not require a username or password, click in the box next to "My ISP does not require a username and password."

PPP Auto Connect

If **PPP auto connect** is activated (by clicking in the appropriate check box), the Gateway will attempt to automatically reconnect the PPP connection if it is dropped or disconnected during an online session. PPP Auto Connect is turned **on** by default.

Encapsulation (PPPoA only)

Select one of the encapsulation options, based on information received from the ISP.

Save & Apply

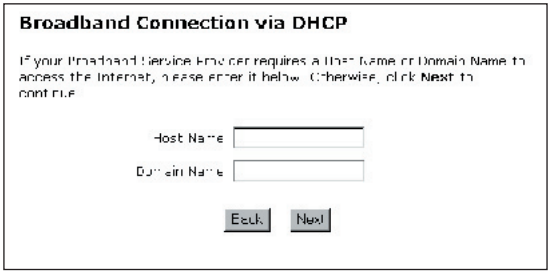
Click this button to save and apply the changes made in either of the "Broadband Connection" windows.

Obtain an IP Through DHCP

Select this option if the IP service is configured to use RFC 1483 Bridged or Routed (used for configurations without a static IP address assigned by an ISP). In this mode, the Gateway will query the ISP to receive the IP address and routing information, which will terminate at the Gateway, as opposed to the IP address and routing information being bridged to terminate at the computer. This allows the use of the router capabilities for the local area network (LAN).

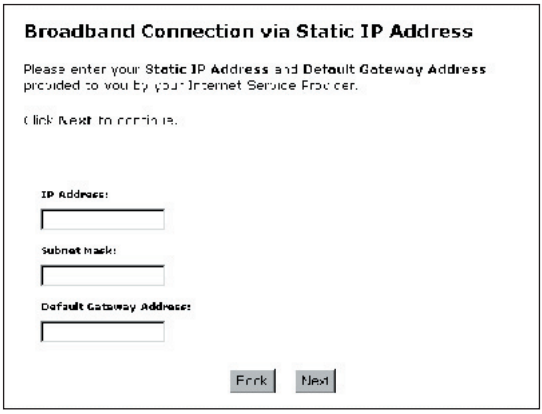
Some ISPs need to authenticate their end users with a **Host Name** and/or **Domain Name**. If this is the case, check with the ISP for a host name and domain name and enter them in the "Broadband Connection via DHCP" screen. If the ISP does not require these settings, leave the text boxes blank.

Note: Contact the ISP if unsure of the proper configuration.



Specify a Static IP Address

Select this option if the ISP service is configured to use RFC 1483 Bridged or Routed using a static IP Address. Enter the **IP Address**, **Subnet Mask**, and **Default Gateway Address** provided by the ISP in the "Broadband Connection via Static IP Address" screen, which causes the IP address and routing information to terminate at the Gateway, as opposed to the IP address and routing information being bridged to terminate at the computer. This allows the use of the router capabilities for the Local Area Network (LAN).



Note: Contact the ISP if unsure of the proper configuration.

Encapsulation

If the Gateway is configured to obtain an IP address through DHCP or to specify a static IP address, select the appropriate encapsulation option used by the ISP (**RFC 1483 Bridged** or **RFC 1483 Routed**).

Note: Contact the ISP if unsure of the proper configuration.

Unnumbered Mode/VIP Mode

If a block of public static IP addresses was purchased from the ISP, select **Unnumbered Mode** by clicking in the appropriate check box. Then, enter the **IP Address** and **Subnet Mask** in the "Gateway Address" and "Unnumbered Subnet Mask" text boxes below "Unnumbered IP Address." Click **Next**, then click **Save and Restart** to make all changes permanent.
The Unnumbered Mode feature automatically configures the appropriate IP routing for the IP address block. The IP route will bypass NAT, enabling the public IPs to be routed WAN-to-LAN, as well as LAN-to-WAN.

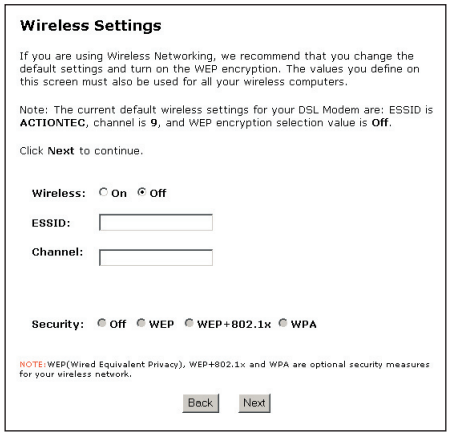
> ***Note***: The IP address information should be obtained from the ISP when purchasing a block of public static IP addresses. Contact the ISP if this information was not received.

VIP Mode This feature is used in conjunction with Unnumbered Mode. When VIP Mode is activated, the Gateway uses NAT for private IP addressing for the local area network (LAN), allowing both public IP addressing and private IP addressing to be configured to the LAN simultaneously, while the DHCP server is reserved for private IP addressing. All computers using public IP addresses with Unnumbered Mode must have the public IP addresses statically assigned.

After configuring the settings, click **Next**, then click **Save and Restart** to make all changes permanent.

Wireless Settings

Selecting **Wireless Settings** in the "Advanced Settings" screen generates the "Wireless Settings" screen.


Wireless Settings
If you are using Wireless Networking, we recommend that you change the default settings and turn on the WEP encryption. The values you define on this screen must also be used for all your wireless computers.
Note: The current default wireless settings for your DSL Modem are: ESSID is ACTIONTEC, channel is 9, and WEP encryption selection value is Off.
Click Next to continue.
Wireless: On Off
ESSID:
Channel:
Security: Off WEP WEP+802.1x WPA
NOTE:WEP(Wired Equivalent Privacy), WEP+802.1x and WPA are optional security measures for your wireless network.
Back
Next

To activate the wireless "radio" of the Gateway, click in the circle next to "On." To turn it off, click in the circle next to "Off."

ESSID

ESSID is the network name assigned to the wireless network. The factory default setting is "ACTIONTEC." Although *Action*tec recommends keeping the default value intact, the ESSID value can be modified, using any combination of alphanumeric characters (i.e., A-Z, a-z, 0-9). All wireless-capable computers included on the Gateway's wireless network must have this same ESSID value. (For the *Action*tec 802.11b Wireless PC Card, the ESSID value must be the same as the SSID value.)

Channel

Channel assigns the frequency band at which the Gateway communicates. In the United States, use channels 1-11. (The default value is set to 9.)

Security

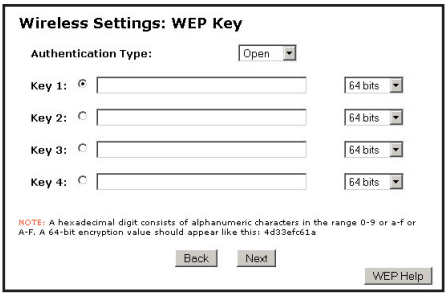
There are four wireless security options: **Off**, **WEP**, **WEP+802.1x**, and **WPA**. The latter three options are different types of wireless security.

Off

Selecting **Off** disables wireless security. Selecting this option allows any computer with wireless capability and the correct ESSID value to join the wireless network.

WEP

Activating **WEP** and clicking **Next** in the Wireless Settings screen generates the "WEP Key" screen. Here, the authentication type, encryption level, and WEP keys are entered to activate WEP (Wired Equivalent Privacy) security encryption for the wireless network.



Authentication Type There are three authentication types: Open, Shared, and Both. Open authentication allows any wireless-enabled device to recognize the Gateway, if the correct WEP key is enabled on the device. Shared allows only wireless-enabled devices with the correct WEP key and Shared key to recognize the Gateway. Selecting Both enables both Open and Shared authentication types.

64-bit WEP 64-bit WEP requires one key, comprising five hexadecimal digit pairs. A hexadecimal digit consists of an alphanumeric character ranging from 0-9 or A-F. An example of a 64-bit WEP key is: 4E-A3-3D-68-72. To create a 64-bit WEP key, activate one of the four keys by clicking in the appropriate circle, then enter five hexadecimal digit pairs in the **Key** text box. After activating 64-bit WEP on the Gateway, a computer with wireless capability can join the network only if this same key is entered in the computer's wireless encryption scheme.

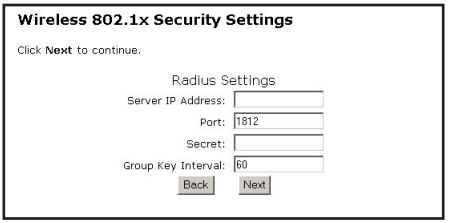
128-bit WEP 128-bit WEP requires one key, comprising 13 hexadecimal pairs. A hexadecimal digit consists of alphanumeric characters ranging from 0-9 or A-F. An example of a 128-bit WEP key is: 3D-44-FE-6C-A1-EF-2E-D3-C4-21-74-5D-B1. To create a 128-bit WEP key, activate **Key 1** by clicking in the appropriate circle, then enter 13 hexadecimal digit pairs in the **Key** text box. After activating 128-bit WEP on the Gateway, a computer with wireless capability can join the network only if this key is entered in the computer's wireless encryption scheme.

256-bit WEP 256-bit WEP requires one key, comprising 29 hexadecimal pairs. A hexadecimal digit consists of alphanumeric characters ranging from 0-9 or A-F. An example of a 256-bit WEP key is: 3D-44-FE-6C-A1-EF-2E-D3-C4-21-74-5D-B1-3D-44-FE-6C-A1-EF-2E-D3-C4-21-74-5D-B1-3E-FE-AE. To create a 256-bit WEP key, activate **Key 1** by clicking in the appropriate circle, then enter 29 hexadecimal digit pairs in the **Key** text box. After activating 256-bit WEP on the Gateway, a computer with wireless capability can join the network only if this key is entered in the computer's wireless encryption scheme.

Note: Not all wireless PC Cards support 128- or 256-bit WEP. Ensure that all PC Cards installed in the networked computers support 128- or 256-bit WEP before activating.

WEP+802.1x

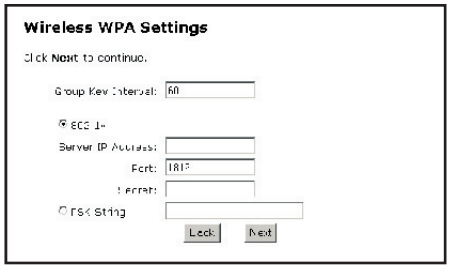
Activating **WEP+802.1x** and clicking **Next** in the Wireless Settings screen generates the "Wireless 802.1x Security Settings" screen. This setting is for enterprise networks only, and should be accessed by experienced information systems specialists only.



To set up WEP+802.1x security, enter the IP address of the RADIUS server in the "Server IP Address" text box, and the "Secret" key (for communication between the RADIUS server and the Router) in the "Secret" text box. The "Port" and "Group Key Interval" values should remain the same

WPA

Activating **WPA** (**W**i-Fi **P**rotected **A**ccess) and clicking **Next** in the Wireless Settings screen generates the "Wireless WPA Settings" screen.

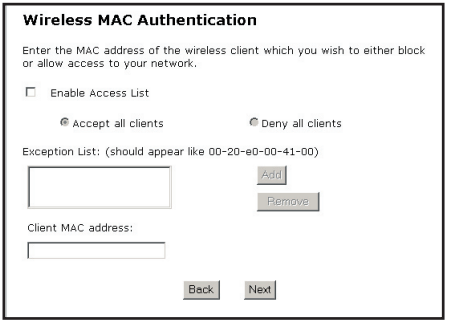


There are two levels of WPA. The "Group Key Interval," "Server IP Address," "Port," and "Secret" text boxes, along with the "802.1x" radio button, are enterprise network specific, and should only be accessed by an experienced information systems professional. See "WEP+802.1x," above, for more information. "PSK String" is for home network security. To set up a PSK (**P**re-**S**hared **K**ey), click in the circle next to **PSK String**, then enter at least eight alphanumeric characters in the text box. All wireless-enabled devices must support WPA and know the PSK to join the network.

Important: Wireless networking devices use public radio channels to transmit voice and data communications. Although WEP is the standard security technology used today and offers some degree of security, Qwest cannot guarantee the security, privacy, or confidentiality of any transmissions made via such devices, and Qwest makes no assurances or warranties relating to their use by you. You are responsible for all use of your Qwest DSL service, regardless of the source of a transmission, whether by you or an authorized third party, over your Qwest DSL service.

Wireless MAC Authentication

Selecting **Wireless MAC Authentication** in the "Advanced Settings" screen generates the "Wireless MAC Authentication" screen.

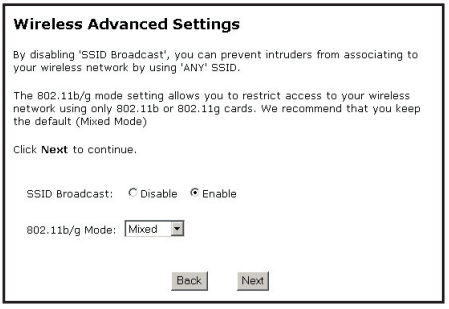

Wireless MAC Authentication
Enter the MAC address of the wireless client which you wish to either block or allow access to your network.
Enable Access List
Accept all clients
Deny all clients
Exception List: (should appear like 00-20-e0-00-41-00)
Add
Remove
Client MAC address:
Back
Next

This feature allows the user to control the Wireless LAN Network by denying or allowing wireless access by specifying the MAC Address of the wireless client(s) allowed or denied on the wireless network

After changing settings, click Next or Back to continue, or Save and Restart to make all changes permanent.

Wireless Advanced Settings

Selecting **Wireless Advanced Settings** in the "Advanced Settings" screen generates the "Wireless Advanced Settings" screen.


Wireless Advanced Settings
By disabling 'SSID Broadcast', you can prevent intruders from associating to your wireless network by using 'ANY' SSID.
The 802.11b/g mode setting allows you to restrict access to your wireless network using only 802.11b or 802.11g cards. We recommend that you keep the default (Mixed Mode)
Click Next to continue.
SSID Broadcast: Disable Enable
802.11b/g Mode: Mixed
Back
Next

SSID Broadcast

To prevent unknown users from associating with the Gateway's network (by using "ANY" as an SSID, for example), disable the Gateway's SSID broadcast by clicking in the circle next to "Disable."

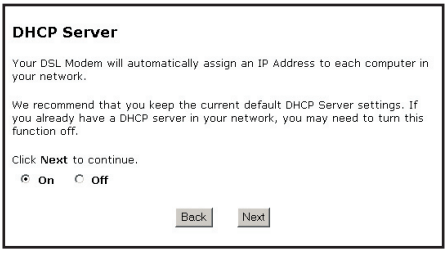
802.11b/g Mode

Access to the Gateway's network can be restricted to wireless clients using either the 802.11b or 802.11g wireless adapters. Click on the down arrow next to the text box and select the desired option. *Action*tec recommends using the "Mixed" mode (the default option), which enables both 802.11b and 802.11g wireless clients to join the network.

After changing settings, click Next or Back to continue, or Save and Restart to make all changes permanent.

DHCP Server

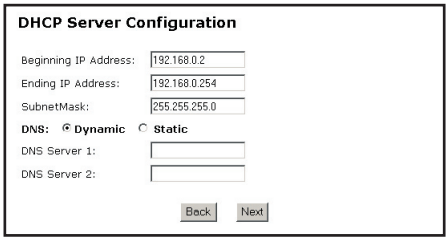
Selecting **DHCP Server** in the "Advanced Settings" screen generates the "DHCP Server" screen. The Gateway has a built-in DHCP (Dynamic Host Configuration Protocol) server that automatically assigns a different IP address to each computer on the network, eliminating IP address conflicts.
The factory default setting is **On**. To disable the DHCP Server, select **Off**.


DHCP Server
Your DSL Modem will automatically assign an IP Address to each computer in your network.
We recommend that you keep the current default DHCP Server settings. If you already have a DHCP server in your network, you may need to turn this function off.
Click Next to continue.
On
Off
Back
Next

Actiontec strongly recommends leaving the DHCP Server option **On**. If the DHCP Server option is **Off**, ensure the IP addresses of the networked computers are on the same subnet as the IP address of the Gateway. For more information, see "DHCP Server Configuration."

DHCP Server Configuration

Clicking **Next** in the "DHCP Server" screen generates the "DHCP Server Settings" screen. Change IP address range and DNS server information here.



Beginning IP Address, Ending IP Address

These are the IP addresses at which the DHCP server starts and stops assigning IP addresses. Actiontec recommends keeping the factory default settings for these IP addresses (192.168.0.2 and 192.168.0.254, respectively).
The beginning and ending IP addresses define the IP address range of the Gateway. If the default values are left intact, the Gateway supplies a unique IP address between 192.168.0.2 and 192.168.0.254 to each computer on the network. Note that the first three groups of numbers of the addresses are identical; this means they are on the same subnet. The IP address of the Gateway must be on the same subnet as the IP address range it generates. For instance, if the Gateway's IP address is changed to 10.33.222.1, set the beginning IP address to 10.33.222.2, and the ending IP address to 10.33.222.254.

DNS (Dynamic or Static)

This is the type of DNS server provided by the ISP. If the ISP provided DNS server information, select the type here. If not, leave as is.

DNS Server 1

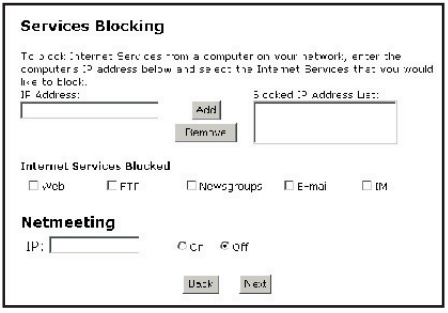
The primary DNS server provided by the ISP. If the ISP provided DNS server information, enter it here. If not, leave the text box intact.

DNS Server 2

The secondary DNS provided by the ISP. If the ISP provided secondary DNS server information, enter it here. If not, leave the text box intact.

Services Blocking

Selecting **Services Blocking** in the "Advanced Settings" screen generates the "Services Blocking" screen.



To modify Internet privileges (Web, FTP, Newsgroups, etc.) for the computers on the network:

1. Enter the computer's IP address in the **IP Address:** text box.
2. Select the Internet service(s) to be blocked.
3. Click **Add** to enter the computer's IP address in the "Blocked IP Address List" text box.
4. To remove blocked services, select the computer's IP address in the "Blocked IP Address List" text box and click **Remove**.

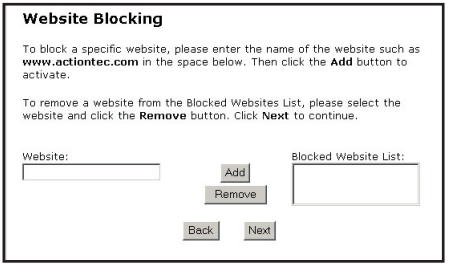
Netmeeting

If a computer on the network uses Netmeeting, enable Netmeeting, by clicking the circle next to "On" and entering the IP address of the computer. Click **Next**, then click **Save and Restart** to apply the settings. If Netmeeting is not needed, click the circle next to "Off."

> ***Note***: Netmeeting is used for NAT/Private IP addressing only. If the computer is configured for Unnumbered Mode and has a public IP address, Netmeeting does not have to be enabled.

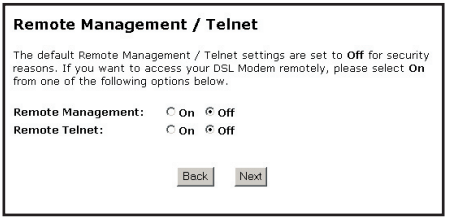
Website Blocking

Selecting **Website Blocking** in the "Advanced Settings" screen generates the "Website Blocking" screen. This feature enables the Gateway to block Web sites to all computers on the network. To block a Web site, enter the address of the Web site in the "Website" text box and click **Add**. The blocked Web site address will be displayed in the "Blocked Website List" text box, and will not be available to computers on the network. To remove a blocked Web site, click on it in the "Blocked Website List," then click **Remove**.


Website Blocking
To block a specific website, please enter the name of the website such as www.actiontec.com in the space below. Then click the Add button to activate.
To remove a website from the Blocked Websites List, please select the website and click the Remove button. Click Next to continue.
Website:
Add
Remove
Blocked Website List:
Back
Next

Remote Management/Telnet

Selecting **Remote Management** in the "Advanced Settings" screen generates the "Remote Management/Telnet" screen. Remote Management allows access to the Gateway through the Internet via another computer. Actiontec recommends leaving the Remote Management and Remote Telnet **Off** (the factory default setting).


Remote Management / Telnet
The default Remote Management / Telnet settings are set to Off for security reasons. If you want to access your DSL Modem remotely, please select On from one of the following options below.
Remote Management: On Off
Remote Telnet: On Off
Back
Next

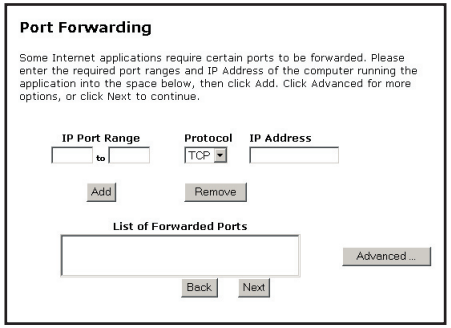
To access the Gateway from the Internet, activate Remote Management by selecting **On** next to "Remote Management" and writing down the WAN IP address of the Gateway (see "WAN IP Address"). On a computer outside of the network, open a Web browser and enter the Gateway's WAN IP address in the address text box. The Gateway's Main Menu (or a password prompt, if a password has been set) appears in the browser window.

Note: Before Remote Management can be activated, the administrator password must be set. To do this, go to the Setup screen and select Change Admin Password. Follow the instructions in the subsequent screens

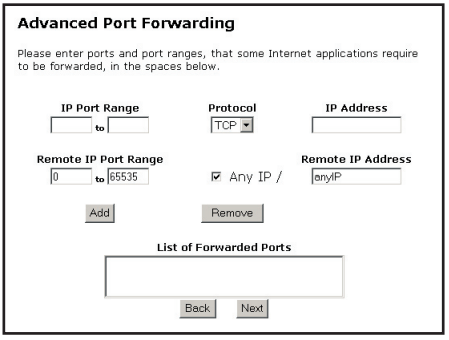
To access the Gateway via Telnet, activate Remote Telnet by selecting **On** next to "Remote Telnet."

Port Forwarding

Selecting **Port Forwarding** in the "Advanced Settings" screen generates the "Port Forwarding" screen. Port forwarding allows certain programs to bypass the Gateway's built-in firewall, allowing access to parts of the network (for hosting a Web or ftp server, for example). To use port forwarding, enter the IP port range in the "IP Port Range" text boxes. (If more than 10 ports are needed, *Action*tec recommends using DMZ Hosting. See "DMZ Hosting" on the next page for more information.) Choose the protocol type from the "Protocol" list box, then enter the IP address of the computer on the network to be used as a host. Click **Add**. The forwarded ports appear in the "List of Forwarded Ports" text box.
To remove forwarded ports, highlight them, then click **Remove**.


Port Forwarding
Some Internet applications require certain ports to be forwarded. Please enter the required port ranges and IP Address of the computer running the application into the space below, then click Add. Click Advanced for more options, or click Next to continue.
IP Port Range
to
Protocol
TCP
IP Address
Add
Remove
List of Forwarded Ports
Advanced ...
Back
Next

Clicking **Advanced** brings up the "Advanced Port Forward" screen.



In this screen, the user can allow only certain IP addresses to access forwarded ports. Enter the port range of the forwarded ports in the "Remote IP Port Range" text boxes, enter the IP address to be allowed access in the "Remote IP Address" text box, then click **Add**. The active forwarded ports will appear in the "List of Forwarded Ports" text box.

To deactivate a forwarded port, select it from the "List of Forwarded Ports" text box, then click "Remove."

DMZ Hosting

Selecting **DMZ Hosting** in the "Advanced Settings" screen generates the "DMZ Hosting" screen. To use DMZ hosting, enter the IP address of the computer on the network to be used as a DMZ host in the "DMZ Host IP Address" text box, then click **On**.

DMZ Hosting
Your DSL Modem can be configured to support Online Gaming and Internet Conferencing services on a network computer. To use this feature, enter the IP Address of the computer in the DMZ Host field below.
Warning: Using a computer in DMZ mode opens the computer to outside intrusion, creating a security risk.
DMZ Host IP Address
On
Off
Back
Next

DMZ hosting is used to support online gaming and Internet conferencing services. These programs usually require multiple open ports, making the network accessible from the Internet. DMZ hosting symbolically places the DMZ host computer outside of the Gateway's network. Actiontec recommends activating DMZ hosting only as long as necessary.

Warning: The DMZ host computer will be vulnerable to computer hackers on the Internet while in DMZ mode.

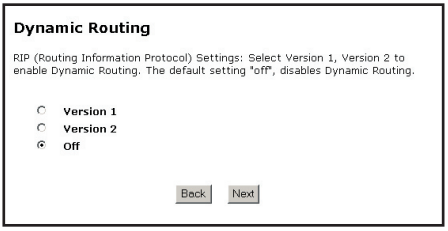
Firewall

Selecting **Firewall** in the "Advanced Settings" screen generates the "Firewall Security Level" screen. Select the level of security needed for the network. See "Appendix f" on page 91 for details concerning each level of security.

Firewall Security Level
The default Firewall Security Level is set to "Off". You can change the Firewall Security Level to suit your networking needs
(Note: Once you have selected a security level, all IP traffic other than the policies specified will be blocked by the firewall.)
High
Medium
Low
Off
Firewall Help
Back
Next

Dynamic Routing

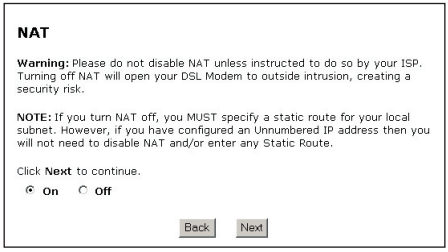
Selecting **Dynamic Routing** in the "Advanced Settings" screen generates the "Dynamic Routing" screen.


Dynamic Routing
RIP (Routing Information Protocol) Settings: Select Version 1, Version 2 to enable Dynamic Routing. The default setting "off", disables Dynamic Routing.
Version 1
Version 2
Off
Back
Next

If a gateway is set up behind the Gateway in the network configuration, consult the documentation that came with the gateway to see what kind of Dynamic Routing is required, then select the needed option.

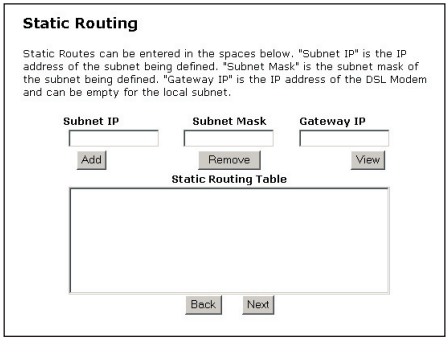
NAT (Network Address Translation)

Selecting **NAT** in the "Advanced Settings" screen generates the "NAT" screen. The Gateway's basic firewall security is based on NAT. Disabling NAT allows the computers connected to the Gateway to be accessed by outside parties. Do not turn NAT off unless instructed to do so by the ISP.


NAT
Warning: Please do not disable NAT unless instructed to do so by your ISP. Turning off NAT will open your DSL Modem to outside intrusion, creating a security risk.
NOTE: If you turn NAT off, you MUST specify a static route for your local subnet. However, if you have configured an Unnumbered IP address then you will not need to disable NAT and/or enter any Static Route.
Click Next to continue.
On
Off
Back
Next

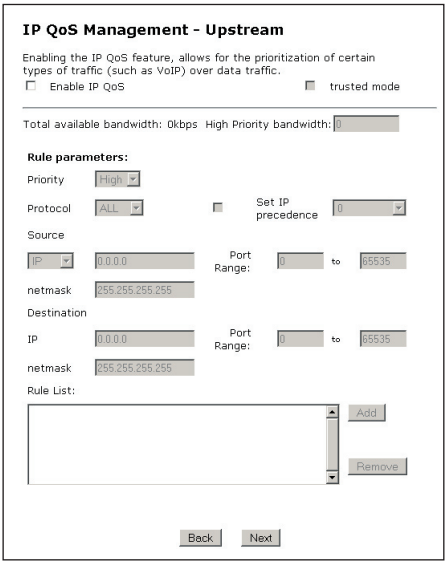
Static Routing

Selecting **Static Routing** in the "Advanced Settings" screen generates the "Static Routing" screen. Enter the addresses in their respective text boxes, then click **Add**. The address will appear in the "Static Routing Table." To remove an address, highlight it by clicking on it in the Static Routing Table, then click **Remove**.


Static Routing
Static Routes can be entered in the spaces below. "Subnet IP" is the IP address of the subnet being defined. "Subnet Mask" is the subnet mask of the subnet being defined. "Gateway IP" is the IP address of the DSL Modem and can be empty for the local subnet.
Subnet IP
Subnet Mask
Gateway IP
Add
Remove
View
Static Routing Table
Back
Next

IP QoS Setting

Selecting **IP QoS Setting** in the "Advanced Settings" screen generates the "IP QoS Setting" screen. In this screen, the user can prioritize certain types of traffic (i.e., voice data) over normal data traffic.



Enable IP QoS

Enable IP QoS by clicking in this box.

Trusted Mode

If activated, all data traffic set to an IP precedence level of "5" will be recognized as high priority traffic, regardless of any IP or MAC address rule settings.

Total Available Bandwidth

Displays the available bandwidth, in kilobytes per second.

High Priority Bandwidth

Enter the bandwidth amount (in kilobytes per second) to be used for high priority traffic here.

Priority

Select either "High" or "Normal" for the priority level of the type of data traffic being configured.

Protocol

Select the data protocol type being configured here. Click on the down arrow to reveal the options: ALL, TCP, UDP, GRE, ICMP.

Set IP Precedence

To activate IP Precedence, click in the appropriate box. Once activated, the user can set the IP precedence level of the traffic being configured by clicking on the down arrow and selecting an option level from 1 (low priority) to 7 (high priority).

Source

Select the "Source" type ("IP" for IP address, "MAC" for MAC address) here, then enter the IP or MAC address in the text box to the right. If IP was selected, enter a netmask address in the appropriate text box. The user can also set a port range .

Destination

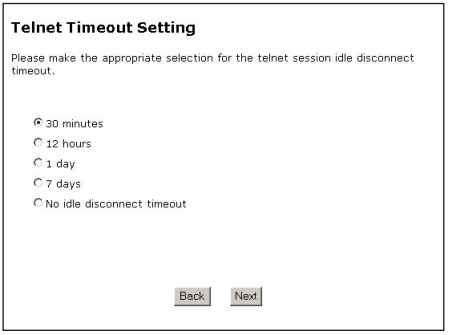
Select the "Destination" type ("IP" for IP address, "MAC" for MAC address) here, then enter the IP or MAC address in the text box to the right. If "IP" was selected, enter a "netmask" address in the appropriate text box. The user can also set a port range.

Rule List

Once a QoS priority rule is configured, click **Add**. The rule will appear in the "Rule List" text box. The user can add more rules to this list, or remove a rule by selecting it, then clicking **Remove**.

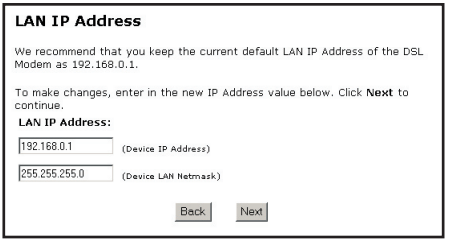
Telnet Timeout Setting

Selecting **Telnet Timeout Setting** in the "Advanced Settings" screen generates the "Telnet Timeout Setting" screen. In this screen, select the amount of idle time before a telnet session is automatically terminated by activating the appropriate radio button.



LAN IP Address

Selecting **LAN IP Address** in the "Advanced Settings" screen generates the "LAN IP Address" screen.


LAN IP Address
We recommend that you keep the current default LAN IP Address of the DSL Modem as 192.168.0.1.
To make changes, enter in the new IP Address value below. Click Next to continue.
LAN IP Address:
192.168.0.1
(Device IP Address)
255.255.255.0
(Device LAN Netmask)
Back
Next

The values in the "LAN IP Address" and "Netmask" text boxes are the IP address and subnet mask address of the Gateway as seen on the network. These values can be modified for your LAN network, but Actiontec recommends keeping the default factory settings (IP address - 192.168.0.1; subnet mask - 255.255.255.0).

> ***Note***: If the Gateway's LAN IP Address is modified, verify the DHCP Server range is within the same subnet. For more information, see "DHCP Server Configuration."

After changing settings, click **Next** or **Back** to continue, or **Save and Restart** to make all changes permanent.

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Viewing the Gateway's Status

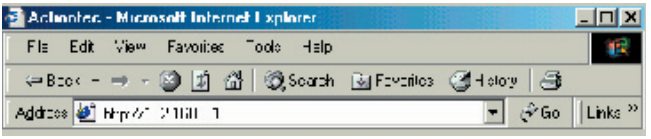
5

This chapter contains information about checking the status of the Gateway, such as wireless settings, remote management, and Web site blocking.

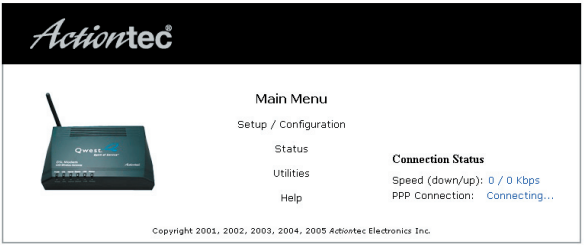
Accessing Status

To access the Status screens, follow these instructions:

1. Open the Web browser. In the address bar enter:
   `http://192.168.0.1`
   then press **Enter** on the keyboard.

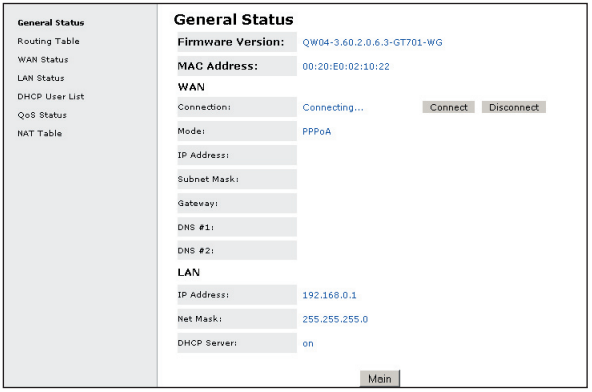


2. The "Main Menu" screen appears. Select **Status**.



Current Status

After selecting Status in the Main Menu screen, the "Current Status" screen appears, displaying many of the Gateway's settings. No settings (other than connecting or disconnecting from the Internet) can be changed from the Current Status screen.



Firmware Version

Displays the firmware version the Gateway is currently running.

MAC Address

Displays the MAC (Media Access Control) address of the Gateway.

WAN - Connection

Displays the state of the connection to the ISP service (Connected or Disconnected).

WAN - Mode

Displays the type of connection used to communicate with the ISP.

WAN - IP Address

Displays the IP address the ISP assigned to the Gateway.

WAN - Subnet Mask

Displays the subnet mask address the ISP assigned to the Gateway.

WAN - Gateway

Displays the gateway address (for the IP address and subnet mask) the ISP assigned to the Gateway.

WAN - DNS #1 & #2

Displays the domain name server address(es) the ISP assigned to the Gateway.

LAN - IP Address

Displays the local area network's (LAN) IP address.

LAN - Net Mask

Displays the subnet mask address configured for the LAN IP address.

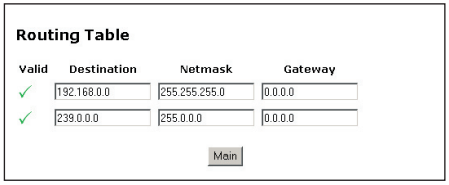
LAN - DHCP Server

Displays the state of the DHCP server (On or Off).

In the left hand column of the General Status screen, there are other Status options available: **Routing Table**, **WAN Status**, **LAN Status**, **Active User List**, and **NAT Table**. Click to generate the option of choice.

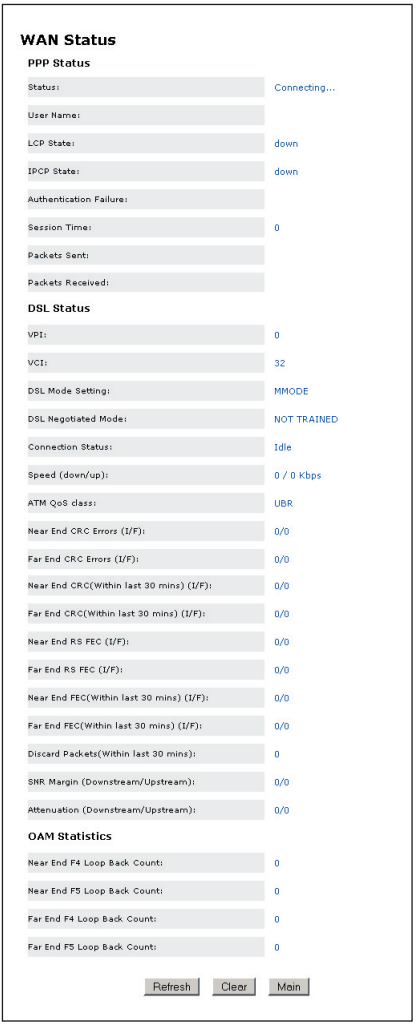
Routing Table

Selecting **Routing Table** generates the "Routing Table" screen. This screen displays on overview of the Gateway's routes.



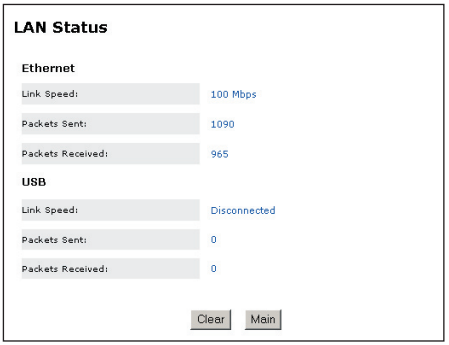
WAN Status

Selecting **WAN Status** generates the "WAN Status" screen. This screen displays on overview of the Gateway's WAN (wide area network) connection.


WAN Status
PPP Status
Status: Connecting...
User Name:
LCP State: down
IPCP State: down
Authentication Failure:
Session Time: 0
Packets Sent:
Packets Received:
DSL Status
VPI: 0
VCI: 32
DSL Mode Setting: MMODE
DSL Negotiated Mode: NOT TRAINED
Connection Status: Idle
Speed (down/up): 0 / 0 Kbps
ATM QoS class: UBR
Near End CRC Errors (I/F): 0/0
Far End CRC Errors (I/F): 0/0
Near End CRC(Within last 30 mins) (I/F): 0/0
Far End CRC(Within last 30 mins) (I/F): 0/0
Near End RS FEC (I/F): 0/0
Far End RS FEC (I/F): 0/0
Near End FEC(Within last 30 mins) (I/F): 0/0
Far End FEC(Within last 30 mins) (I/F): 0/0
Discard Packets(Within last 30 mins): 0
SNR Margin (Downstream/Upstream): 0/0
Attenuation (Downstream/Upstream): 0/0
OAM Statistics
Near End F4 Loop Back Count: 0
Near End F5 Loop Back Count: 0
Far End F4 Loop Back Count: 0
Far End F5 Loop Back Count: 0
Refresh
Clear
Main

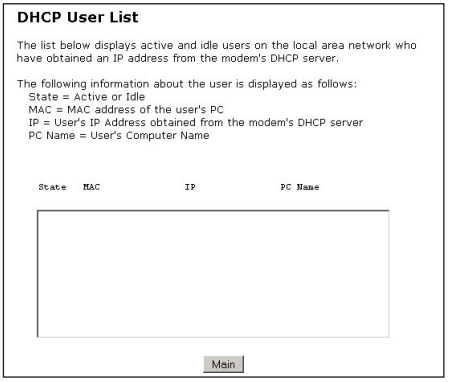
LAN Status

Selecting **LAN Status** generates the "LAN Status" screen. This screen displays on overview of the Gateway's LAN (local area network) connections.



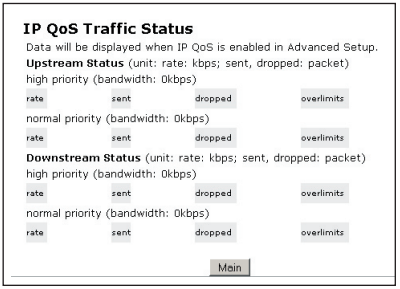
DHCP User List

Selecting **DHCP User List** generates the "DHCP User List" screen. This screen displays a list of the active and idle users on the Gateway's local area network who have obtained an IP address from the Gateway's DHCP server.


DHCP User List
The list below displays active and idle users on the local area network who have obtained an IP address from the modem's DHCP server.
The following information about the user is displayed as follows:
State = Active or Idle
MAC = MAC address of the user's PC
IP = User's IP Address obtained from the modem's DHCP server
PC Name = User's Computer Name
State
MAC
IP
PC Name
Main

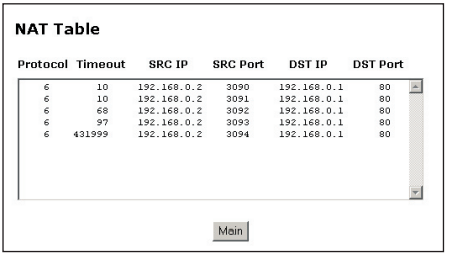
IP QoS Traffic Status

Selecting **QoS Status** generates the "IP QoS Traffic Status" screen. This screen displays the QoS cofiguration settings (see "IP QoS Management" on page 45 for more information).


IP QoS Traffic Status
Data will be displayed when IP QoS is enabled in Advanced Setup.
Upstream Status (unit: rate: kbps; sent, dropped: packet)
high priority (bandwidth: 0kbps)
rate sent dropped overlimits
normal priority (bandwidth: 0kbps)
rate sent dropped overlimits
Downstream Status (unit: rate: kbps; sent, dropped: packet)
high priority (bandwidth: 0kbps)
rate sent dropped overlimits
normal priority (bandwidth: 0kbps)
rate sent dropped overlimits
Main

NAT Table

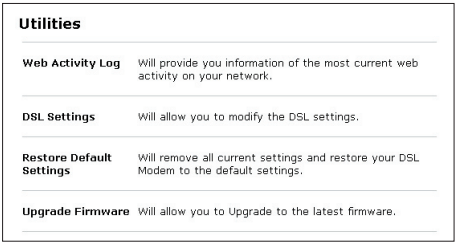
Selecting **NAT Table** generates the "NAT Table" screen. This screen displays details concerning the Gateway's NAT (Network Address Translation) settings.



Using Utilities

6

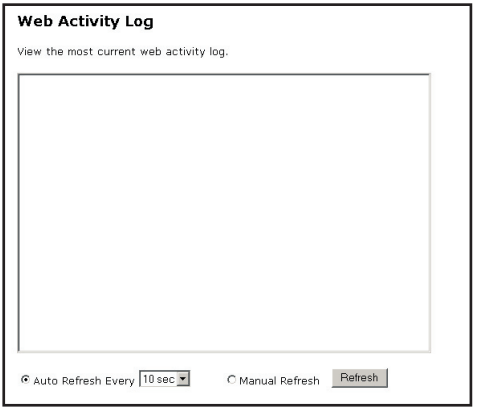
To access the Gateway's Web-based Utilities options, select **Utilities** from the "Main Menu" screen. The "Utilities" screen appears.


Utilities
Web Activity Log
Will provide you information of the most current web activity on your network.
DSL Settings
Will allow you to modify the DSL settings.
Restore Default Settings
Will remove all current settings and restore your DSL Modem to the default settings.
Upgrade Firmware
Will allow you to Upgrade to the latest firmware.

From this screen, the Web activity log can be viewed, the DSL settings changed, the Gateway's factory default settings restored, and the Gateway's firmware upgraded.

Web Activity Log

The Web Activity Log provides information about the Web sites each computer on the Gateway's network has visited. To access the Web Activity Log, select **Web Activity Log** from the "Utilities" screen.



Auto Refresh

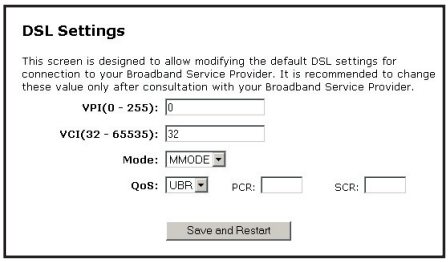
To set the Web Activity Log screen to automatically refresh at certain intervals, activate the circle next to "Auto Refresh Every" at the bottom of the Web Activity Log screen, then enter a time value (in seconds) in the text box, or click on the down arrow and select a time value from the menu that appears. The Web Activity Log will refresh at the selected interval.

Manual Refresh

To set the Web Activity Log screen to manual refresh, activate the circle next to "Manual Refresh" at the bottom of the Web Activity Log screen. To refresh the Web Activity Log screen, click **Refresh**.

DSL Settings

To access DSL Settings, select **DSL Settings** from the "Utilities" screen. The Gateway's VPI, VCI, Mode, and QoS (Quality of Service) settings can be changed from this screen. Actiontec recommends not changing these values without first consulting the ISP.

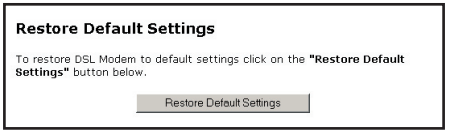

DSL Settings
This screen is designed to allow modifying the default DSL settings for connection to your Broadband Service Provider. It is recommended to change these value only after consultation with your Broadband Service Provider.
VPI(0 - 255):
0
VCI(32 - 65535):
32
Mode:
MMODE
QoS:
UBR
PCR:
SCR:
Save and Restart

Restore Default Settings

To restore the Gateway to its factory default settings, select **Restore Default Settings** from the Utilities screen. When the "Restore Default Settings" screen appears, click **Restore Default Settings**. Any changes made to the Gateway's settings will be lost and the factory default settings restored. During this process, the Gateway's Power light flashes and the Gateway is disabled.

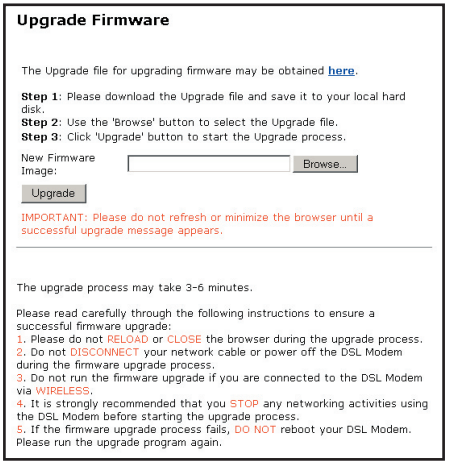
Warning: Do not unplug the Power cord from the Gateway during the Restore Default Settings process. Doing so may result in permanent damage to the Gateway.

When the Power light stops flashing and glows steadily green, the Gateway is fully operational.


Restore Default Settings
To restore DSL Modem to default settings click on the "Restore Default Settings" button below.
Restore Default Settings

Upgrade Firmware

Selecting **Upgrade Firmware** in the Utilities screen generates the "Select Upgrade File" screen. Actiontec periodically posts firmware upgrades to enhance the Gateway's capabilities. Follow the instructions on-screen to upgrade the Gateway's firmware.


Upgrade Firmware
The Upgrade file for upgrading firmware may be obtained here.
Step 1: Please download the Upgrade file and save it to your local hard disk.
Step 2: Use the 'Browse' button to select the Upgrade file.
Step 3: Click 'Upgrade' button to start the Upgrade process.
New Firmware Image:
Browse...
Upgrade
IMPORTANT: Please do not refresh or minimize the browser until a successful upgrade message appears.
The upgrade process may take 3-6 minutes.
Please read carefully through the following instructions to ensure a successful firmware upgrade:
1. Please do not RELOAD or CLOSE the browser during the upgrade process.
2. Do not DISCONNECT your network cable or power off the DSL Modem during the firmware upgrade process.
3. Do not run the firmware upgrade if you are connected to the DSL Modem via WIRELESS.
4. It is strongly recommended that you STOP any networking activities using the DSL Modem before starting the upgrade process.
5. If the firmware upgrade process fails, DO NOT reboot your DSL Modem. Please run the upgrade program again.

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Troubleshooting 7

This chapter contains a list of problems that may be encountered while using the Gateway, and techniques to try and overcome the problem. Note that these techniques may not solve the problem.

LAN Connection Failure

- Ensure the Gateway is properly installed, the LAN connections are installed correctly, and the power is on.
- Confirm the computer and Gateway are on the same network segment. If unsure, let the computer get the IP address automatically by initiating the DHCP function (see "DHCP Server"), then verify the computer is using an IP address within the default range (192.168.1.2 through 198.168.1.254). If the computer is not using an IP address within the range, it will not connect to the Gateway.
- Ensure the subnet mask address is set to 255.255.255.0 by clicking **Status** in the "Main Menu" screen.

Cannot Connect to the Internet

- Ensure both ends of the power cord and all network cables are properly connected.
- Ensure the subnet mask address is set to 255.255.255.0 by clicking **Status** in the "Main Menu" screen.
- Verify the Gateway's settings are the same as the computer's by clicking **Status** in the "Main Menu" screen.
- If running Windows 98 SE or Me, check the computer's TCP/IP settings. Select **Start**, **Run**, enter

  `winipcfg`

  in the "Open" text box, then press **OK**. The "IP Configuration" window appears. Ensure the text box at the top of the window contains the name of the Ethernet adapter installed in the computer. If not, click on the down arrow next to the text box. When the list appears, click on the appropriate Ethernet adapter. In the fields below, the Ethernet adapter's various addresses appear.

There should be an entry for IP address, Subnet Mask, and Default Gateway. Additionally, the "IP Address" entry should be on the 192.168.0.X network (with "X" defining a range from 2 though 255).
If the Ethernet adapter is showing an incorrect IP address, click **Release**, which sets all values back to 0 (zero). Then, click **Renew** (this process may take a few seconds). The renewed IP address should be on the 192.168.0.X network.
If an error occurs, or the IP address renews with an address outside the 192.168.0.X network, contact the ISP immediately

- If running Windows 98 SE or Me, check the computer's TCP/IP settings. Select **Start**, **Run**, enter

  CMD

  in the "Open" text box, then press **OK**. A "DOS" window appears, with a blinking cursor (prompt). Enter

  ipconfig

  at the prompt, then press **Enter** on the keyboard.
  The IP address of the Ethernet adapter should appear in the DOS window. Ensure the IP address is on the 192.168.0.X network (with "X" defining a range from 2 though 255).
  If the Ethernet adapter is showing an incorrect IP address, enter

  ipconfig /release

  at the prompt (note the space before the forward slash), then press **Enter** on the keyboard, which sets all values back to 0 (zero). Next, enter

  ipconfig /renew

  at the prompt (note the space before the forward slash), then press **Enter** on the keyboard (this process may take a few seconds). The renewed IP address should be on the 192.168.0.X network.
  If an error occurs, or the IP address renews with an address outside the 192.168.0.X network, contact the ISP immediately.

- Ensure the browser is not set to "Never dial a connection" and there are no previous LAN settings.
  To check this, go to **Start**, **Settings**, **Control Panel**. In the Control Panel, double-click **Internet Options**. When the "Internet Properties" window appears, ensure the "Never dial a connection" option is not activated, then click **LAN Settings**. When the "Local Area Network (LAN) Settings" window appears, ensure no settings are activated. If there are settings activated, deactivate them.

- Shutdown and restart the computer. After the computer restarts, unplug the Power cord from the Gateway and plug it back in. When the lights glow solid green, try accessing the Internet.

Time out error occurs when entering a URL or IP Address

- Verify all the computers are working properly.
- Ensure the IP settings are correct.
- Ensure the Gateway is on and connected properly.
- Verify the Gateway's settings are the same as the computer by clicking **Status** in the "Main Menu" screen.

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Reference

This appendix contains information about various topics, including accessing information about your Windows computer.

Locating Computer Information

The following procedure is valid for Windows 98 SE, Me, NT 4.0, 2000 and XP.

1. From the desktop, right-click on **My Computer**.
2. Select **Properties** from the menu that appears.
3. When the "System Properties" window appears, select **General**. The version of the operating system, processor type, and amount of RAM installed in the computer are listed here.
4. Close the System Properties window.
5. From the desktop, double-click on **My Computer**.
6. Right-click the icon representing your hard disk. For example: Local Disk (C:). Some computers have multiple hard disks.
7. From the menu that appears, select **Properties**.
8. When the window appears, select **General**.
9. The "Free space" value is the available space on the hard disk.
10. Close all windows.

Locating Windows Operating System Files

If the operating system files reside on the hard drive of the computer, follow the instructions below to locate them. If the files are not on the hard drive, they must be loaded from the installation disks.

Windows 98 SE

1. From the desktop, click **Start**.
2. When the menu appears, select **Find,** then **Files or Folders**.
3. When the "Find: All Files" window appears, select **Name & Location**.
4. In the "Named" text box, enter:
   `*.cab`
5. Click the **down arrow** next to the "Look In" text box and select **My Computer** from the list that appears.
6. Click **Find Now**.
7. When the search is complete, note the directory path that appears most often in the "In Folder" column. For example: C:\WINDOWS \SYSTEM.
8. The Windows operating system files are located in this directory. Write down the directory path for future reference.
9. Close the Find: All Files window.

Windows Me, 2000

1. From the desktop, click **Start**.
2. Select **Search**, then **For Files and Folders**.

3a. Windows Me: The "Search Results" window appears. In the "Search for files or folders named" text box, enter:
`*.cab`

3b. Windows 2000: The "Search Results" window appears. In the "Search for files or folders named" text box, enter:
`i386`

4. Click the **down arrow** next to the "Look in" text box and select **My Computer** from the list that appears.

5. Click **Search Now**.

6a. **Windows Me**: When the search is complete, note the directory path that appears most often in the "In Folder" column. For example: C:\WINDOWS \OPTIONS\INSTALL.

6b. **Windows 2000**: When the search is complete, note the directory path that appears most often in the "In Folder" column. For example: C:\WINNT \Driver Cache.

7. The Windows operating system files are located in this directory. Write down the directory path for future reference.

8. Close the Search Results window.

Windows NT 4.0

1. From the desktop, click **Start**.

2. When the menu appears, select **Find,** then **Files or Folders**.

3. When the "Find: All Files" window appears, select **Name & Location**.

4. In the "Named" text box, enter:

```
i386
```

5. Click the **down arrow** next to the "Look In" text box and select **My Computer** from the list that appears.

6. Click **Find Now**.

7. When the search is complete, note the directory path that appears most often in the "In Folder" column. For example: C:\.

8. The Windows operating system files are located in this directory. Write down the directory path (followed by "i386") for future reference.

9. Close the Find: All Files window.

Windows XP

1. From the desktop, click **Start**.
2. Select **Search**, then **For Files and Folders**.
3. The "Search Results" window appears. In the panel at left titled "What do you want to search for?", click **All files and folders**.
4. Another panel, titled "Search by any or all of the criteria below" appears. In the "Look in" text box, click the **down arrow** and select **My Computer** from the menu that appears.
5. In the "All or part of the file name" text box, enter:
   `i386`
6. Click **Search**.
7. When the search is complete, note the directory path that appears most often in the "In Folder" column. For example: C:\WINDOWS \Driver Cache\.
8. The Windows operating system files are located in this directory. Write down the directory path (followed by "\i386") for future reference.
9. Close the Search Results window.

Static IP Address on the Computer

B

To communicate with the Gateway from a computer on the network (to use the Web Configuration Utility, for example), the user may have to switch the IP address settings from DHCP-enabled to static IP, so that the computer and the Gateway are on the same subnet.

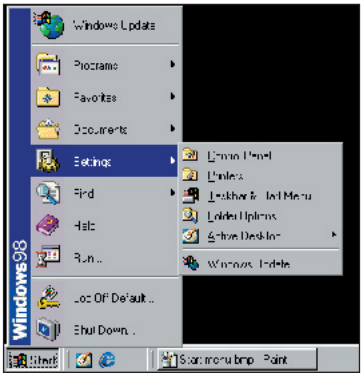
To set up static IP on a computer, select the operating system and follow the instructions.

> ***Note***: The following procedures are based on the Gateway's factory default IP address. If the Gateway's IP address has been changed, enter the new IP address when instructed to enter an IP address.

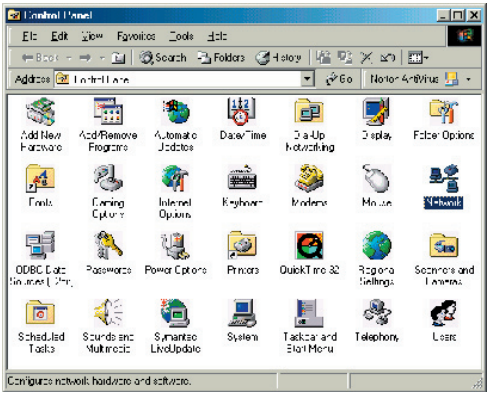
Windows 98 SE

1. From the desktop, click on the **Start** button in the lower left corner.
2. From the menu that appears, select **Settings**.

3. Another menu appears. Select **Control Panel**.

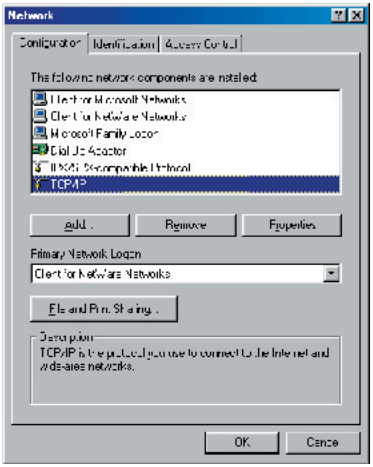


4. When the "Control Panel" window appears, double-click **Network**.

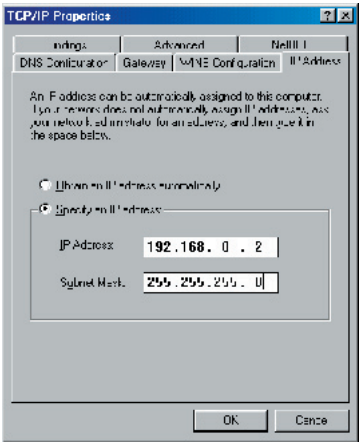


5. The "Network" window appears. In the "The following network components

are installed" list box, locate and double-click **TCP/IP**.



6. The "TCP/IP Properties" window appears. Select **IP Address**.



7. In the IP Address tab, make sure the circle next to "Specify an IP Address" is selected. When active, a black dot appears in the circle. If the circle already contains a black dot, leave it alone.

8. Enter the following numbers in the "IP Address" text box:

`192.168.0.2`

Press the space bar on the keyboard to add the periods between the numbers.

9. Enter the following numbers in the "Subnet mask" text box:

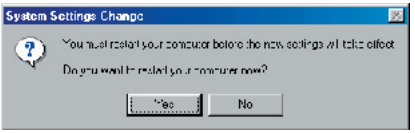
255.255.255.0

Press the space bar on the keyboard to add the periods between the numbers.

10. Click **OK**. The TCP/IP Properties window disappears.

11. In the Network window, click **OK**. The Network window disappears.

12. The "System Settings Change" window appears, asking whether the computer should be restarted. Click **Yes**.

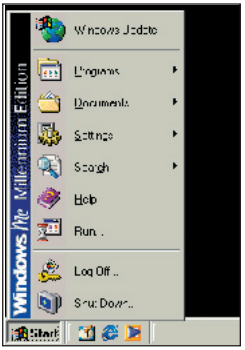


The computer restarts. It is now set up with a static IP address, allowing the user to access the Gateway's Advanced Setup utility.

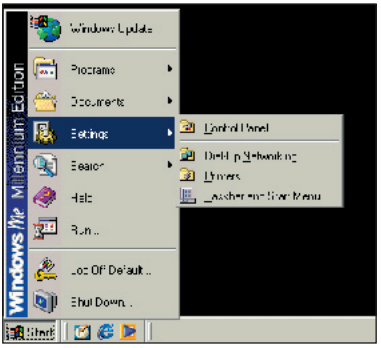
Windows Me

1. From the desktop, click on the **Start** button in the lower left corner.

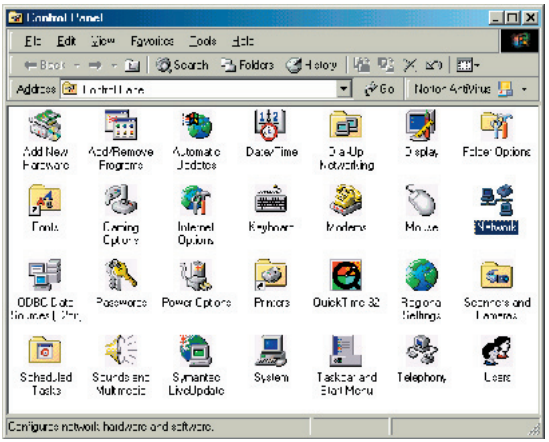
2. From the menu that appears, select **Settings**.



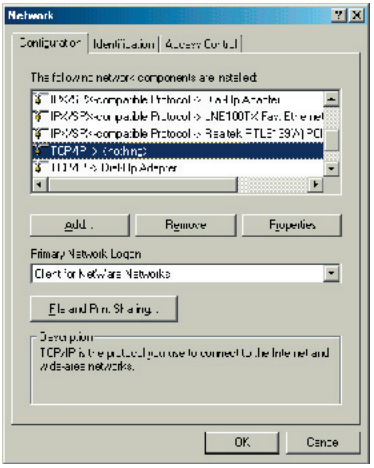
3. Another menu appears. Select **Control Panel**.



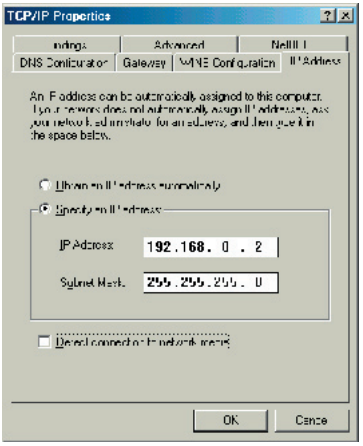
4. When the "Control Panel" window appears, double-click **Network**.



5. The "Network" window appears. In the "The following network components are installed" list box, locate and double-click **TCP/IP**.



6. The "TCP/IP Properties" window appears. Click **IP Address**.



7. In the IP Address tab, make sure the circle next to "Specify an IP Address" is selected. When active, a black dot appears in the circle. If the circle already contains a black dot, leave it alone.

8. Enter the following numbers in the "IP Address" text box:

192.168.0.2

Do not include the periods; they are automatically entered.

9. Enter the following numbers in the "Subnet mask" text box:

`255.255.255.0`

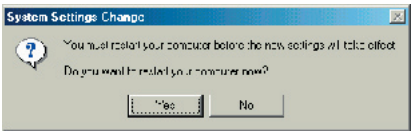
Do not include the periods; they are automatically entered.

10. Click **OK**. The TCP/IP Properties window disappears.

11. If there is a check in the box next to "Detect connection to network media," click on it to uncheck the box.

12. In the Network window, click **OK**. The Network window disappears.

13. The "System Settings Change" window appears, asking whether the computer should be restarted. Click **Yes**.



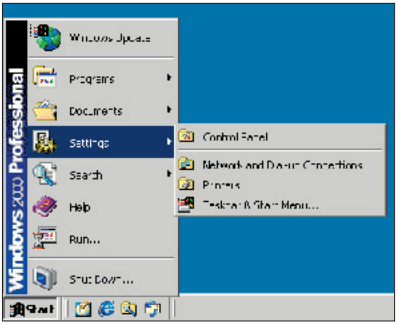
The computer restarts. It is now set up with a static IP address, allowing the user to access the Gateway's Advanced Setup utility.

Windows 2000

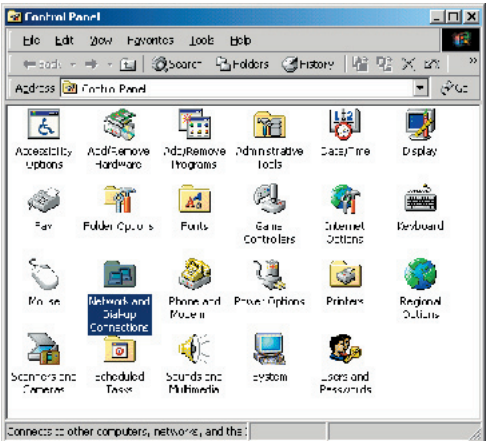
1. From the desktop, click on the **Start** button in the lower left corner.

2. From the menu that appears, select **Settings**.

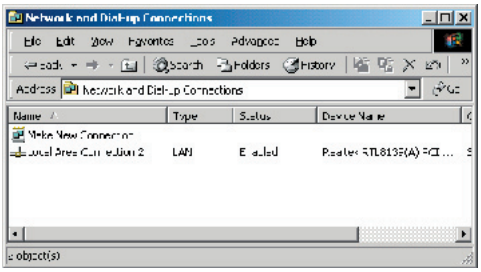
3. Another menu appears. Select **Control Panel**.



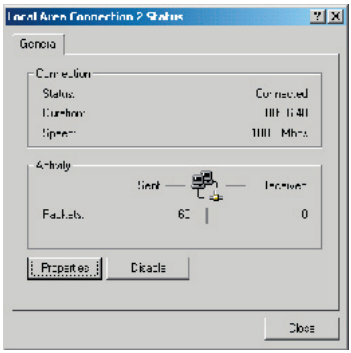
4. When the "Control Panel" window appears, double-click **Network and Dial-up Connections**.



5. In the "Network and Dial-up Connections" window, double-click **Local Area Connection**. A number may be displayed after the Local Area Connection. If there is more than one Local Area Connection listed, locate the one that corresponds to the network card installed in the computer by finding the name of the network card in the "Device Name" column.

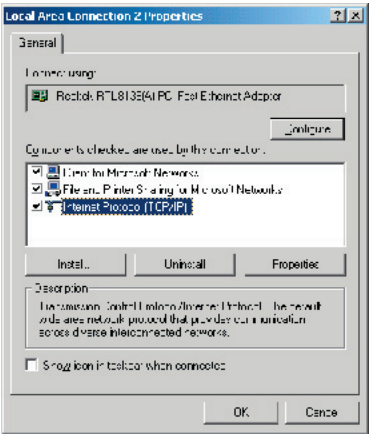


6. The "Local Area Connection Status" window appears. Select **General**, then click **Properties**.

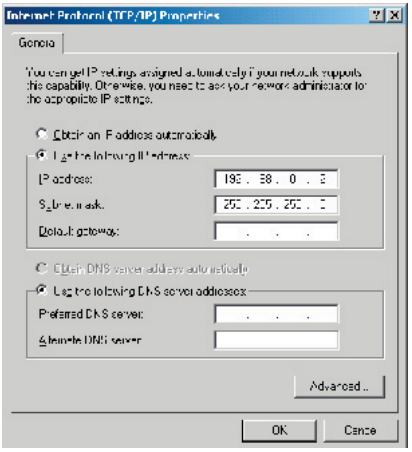


7. The "Local Area Connection Properties" window appears. Click **General**.

8. In the "Components checked are used by this connection" list box, double-click **Internet Protocol (TCP/IP)**.



9. The "Internet Protocol (TCP/IP) Properties" window appears.



10. In the **General** tab, make sure the circle next to "Obtain an IP Address automatically" is selected. When active, a black dot appears in the circle. If the circle already contains a black dot, leave it alone.

11. Enter the following numbers in the "IP Address" text box:

192.168.0.2

Press the space bar on the keyboard to add the periods between the numbers.

12. Enter the following numbers in the "Subnet mask" text box:

255.255.255.0

Press the space bar on the keyboard to add the periods between the numbers.

13. Click **OK**. The "Internet Protocol (TCP/IP) Properties" window disappears.

14 In the "Local Area Connection Properties" window, click **OK**. The Local Area Connection Properties window disappears.

15. Click **Close** in the Local Area Connection Status window. The window disappears.

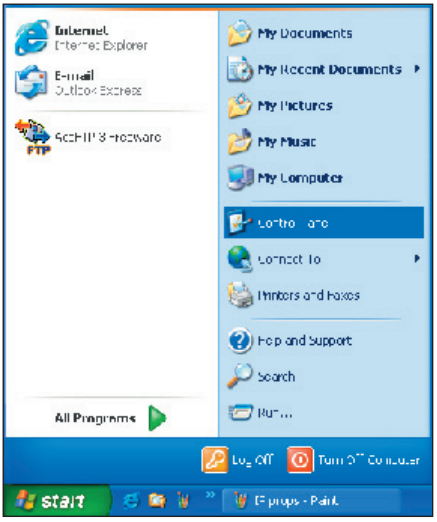
16. Close the Network and Dial-up Connections window by clicking on the "**x**" button at the upper right corner of the window.

The computer is now set up with a static IP address, allowing the user to access the Gateway's Advanced Setup utility.

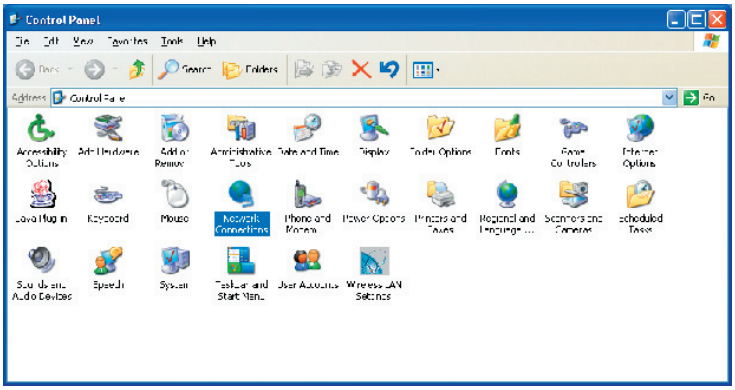
Windows XP

1. From the desktop, click **Start** button in the lower left corner.

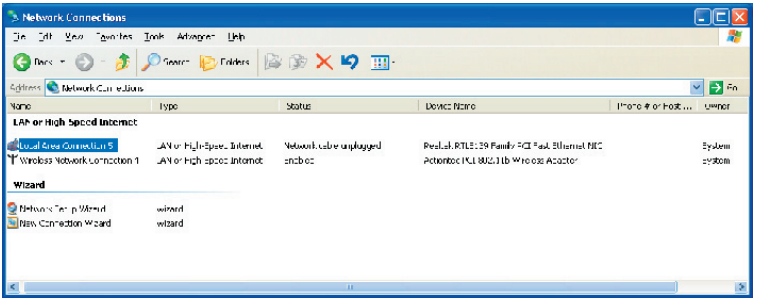
2. From the menu that appears, select **Control Panel**.



3. When the "Control Panel" window appears, double-click **Network Connections**.

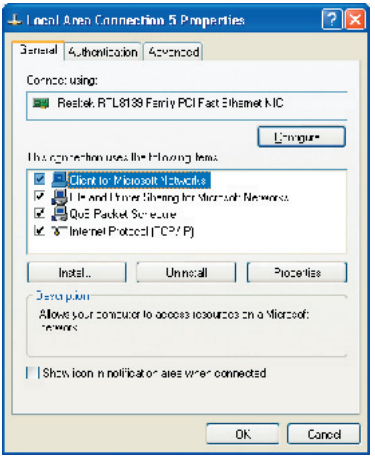


4. In the "Network Connections" window, double-click **Local Area Connection**. A number may be displayed after the Local Area Connection. If more than one Local Area Connection is listed, locate the one that corresponds to the network card installed in your computer by finding the name of the network card in the "Device Name" column.

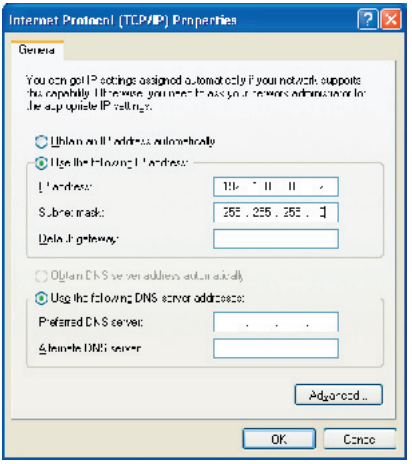


5. The "Local Area Connection Properties" window appears. Select **General**.

6. In the "This connection uses the following items" list box, double-click **Internet Protocol** (TCP/IP).



7. The "Internet Protocol (TCP/IP) Properties" window appears.



8. In the **General** tab, make sure the circle next to "Use the following IP Address" is selected. When active, a black dot appears in the circle. If the circle already contains a black dot, leave it alone.

9. Enter the following address in the "IP Address" text box:

192.168.0.2

Enter the periods in the address by pressing the space bar on the keyboard.

10. Enter the following address in the "Subnet mask" text box:

255.255.255.0

Enter the periods in the address by pressing the space bar on the keyboard.

11. Click **OK**. The Internet Protocol (TCP/IP) Properties window disappears.

12 In the Local Area Connection Properties window, click **Close**. The Local Area Connection Properties window disappears.

13. Click **Close** in the Local Area Connection Status window. The window disappears.

14. Close the Network and Dial-up Connections window by clicking on the "**x**" button at the upper right corner of the window.

The computer is now set up with a static IP address, allowing the user to access the Gateway's Advanced Setup utility.

Computer Security

C

The Internet is a giant network of computers located all over the world. When a computer is connected to the Internet, it can exchange information with any other computer on the Internet. This allows a computer user to send e-mail, surf the World Wide Web, download files, and buy products and services online, but it also makes the computer vulnerable to attack from persons intent on doing malicious mischief, or worse. Unless access to the computer is controlled, someone on the Internet can access the information on the computer and damage or destroy that information.

Actiontec recommends securing your computer from unwanted intrusion. Security is ultimately the end user's responsibility. Please secure your computer, and don't be a victim.

Comparing DSL Service with a Dial-Up Modem

With a dial-up modem, a computer user makes an Internet connection by dialing a telephone number, surfs the Internet for a period of time, and then disconnects the dial-up modem. No one on the Internet can access a computer that is not connected to the Internet.

Unlike a dial-up modem, DSL service is "always connected." The connection is always available – there is no need to dial a phone number to access the Internet. The computer can be connected to the Internet all the time.

With both types of Internet connections, access to the computer must be controlled to make sure someone on the Internet doesn't access the information on the computer. The longer the computer is connected to the Internet, the easier it is for someone on the Internet to find the computer and attempt to access it without permission. DSL service also provides fast Internet connections. This not only improves Internet performance, it also improves Internet performance for anyone attempting to access the computer.

Modem Security

If connecting to the ISP through Point-to-Point Protocol (PPP), be sure to provide the Modem with an administrative password. If a password is not set, someone on the Internet can access the Modem and change its configuration or steal your PPP login name and password. For instructions on setting the password, see the "Advanced Setup" chapter.

If connecting to the ISP through bridging mode, the Modem should be safe from unwarranted and illegal intrusion.

Computer Security

To protect the valuable information on the computer, review the following topics. These topics cover software programs and operating system features affecting the security of the computer's data.

Anti-Virus Programs

The computer should have an anti-virus program, and the virus definitions should be updated on a regular basis – at least once a month.

E-mail Attachments

Never run a program received as an attachment to an e-mail message unless the program is known to be safe. A program from an unknown source can delete all the files on the computer's hard disk or install a "backdoor" software application that lets people on the Internet gain access to the computer without permission.

Internet Browsers

Always exit the Internet browser (Internet Explorer or Netscape Navigator, for example). Never "minimize" the browser or leave it open in the background. Breaking into a computer is easier when an Internet browser is running.

Network Applications

Network applications (such as software programs) that allow remote access to the computer also make the computer vulnerable to access by other people on the Internet. If using a network application that allows remote access, consider installing a firewall.

Electronic Security

Here are two methods to secure your computer electronically.

Network Address Translation

If a local area network and a PPP connection to the ISP using dynamic IP addresses through a DHCP server are being used, Network Address Translation (NAT) is being used. NAT provides a very basic level of security.

Firewalls

The safest way to prevent attacks on the computer is through a firewall – a hardware device or software program that protects the computer from unauthorized access by controlling who can access your computer and monitoring the transmissions between the computer and the Internet

Windows XP has a built-in firewall. For more information, select **Help and Support Center** from the Help menu. Search for **Internet Connection Firewall**.

If Windows 98 SE, Me, NT 4.0, or 2000 is running on the computer, consider installing a firewall. Hardware and software firewall products are changing rapidly as more homes and businesses establish high-speed digital connections between their local area networks and the Internet.

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Specifications

D

General

Model Number

GT704WG - QW04 (54 Mbps Wireless DSL Gateway)

Standards

IEEE 802.3 (10BaseT)
IEEE 802.3u (100BaseTX)
G.dmt
G.lite
t1.413
RFC 1483, 2364, 2516

Protocol

LAN - CSMA/CD
WAN - PPP, DHCP, Static IP

WAN

Full-rate ADSL Interface

LAN

4 10/100 RJ-45 switched ports
USB port

Speed

LAN Ethernet: 10/100Mbps auto-sensing

Cabling Type

Ethernet 10BaseT: UTP/STP Category 3 or 5
Ethernet100BaseTX: UTP/STP Category 5
USB

Wireless Operating Range

Indoors

Up to 91M (300 ft.) @ 54 Mbps

Outdoors

Up to 457M (1500 ft.) @ 54Mbps

Topology

Star (Ethernet)

LED Indicators

Power, DSL, Internet, Ethernet, USB, Wireless

Environmental

Power

External, 12V DC, 600mA

Certifications

FCC Class B, FCC Class C (part 15, 68), CE Mark Commercial, UL

Operating Temperature

0º C to 40º C (32ºF to 104ºF)

Storage Temperature

-20ºC to 70ºC (-4ºF to 158ºF)

Operating Humidity

10% to 85% non-condensing

Storage Humidity

5% to 90% non-condensing

Note: Specifications are subject to change without notice.

Glossary

E

Access Point

A device that allows wireless clients to connect to one another. An access point can also act as a bridge between wireless clients and a "wired" network, such as an Ethernet network. Wireless clients can be moved anywhere within the coverage area of the access point and remain connected to the network. If connected to an Ethernet network, the access point monitors Ethernet traffic and forwards appropriate Ethernet messages to the wireless network, while also monitoring wireless traffic and forwarding wireless client messages to the Ethernet network.

ATM (Asynchronous Transfer Mode)

A networking technology based on transferring data in fixed-size packets

Client

A desktop or mobile computer connected to a network.

DHCP (Dynamic Host Configuration Protocol)

A protocol designed to automatically assign an IP address to every computer on your network.

DNS (Domain Name System) Server Address

Allows Internet host computers to have a domain name and one or more IP addresses. A DNS server keeps a database of host computers and their respective domain names and IP addresses so that when a user enters a domain name into a Web browser, the user is sent to the proper IP address. The DNS server address used by computers on the home network corresponds to the location of the DNS server the ISP has assigned.

DSL (Digital Subscriber Line) Modem

A modem that uses existing phone lines to transmit data at high speeds.

Encryption

A method to allow wireless data transmissions a level of security.

ESSID (Extended Service Set Identifier)

A unique identifier for a wireless network. Also known as "SSID."

Ethernet Network

A standard wired networking configuration using cables and hubs.

Firewall

A method preventing users outside the network from accessing and/or damaging files or computers on the network.

Gateway

A central device that manages the data traffic of your network, as well as data traffic to and from the Internet.

IP (Internet Protocol) Address

A series of four numbers separated by periods identifying a unique Internet computer host.

ISP Gateway Address

An IP address for the Internet router. This address is only required when using a cable or DSL modem.

ISP (Internet Service Provider)

A business that allows individuals or businesses to connect to the Internet.

LAN (Local Area Network)

A group of computers and devices connected together in a relatively small area (such as a house or an office). A home network is considered a LAN.

MAC (Media Access Control) Address

The hardware address of a device connected to a network.

NAT (Network Address Translation)

A method allowing all of the computers on a home network to use one IP address, enabling access to the Internet from any computer on the home network without having to purchase more IP addresses from the ISP.

PC Card

An adapter that inserts in the PCMCIA slot of a computer, enabling the communication with a device.

PPPoE (Point-To-Point Protocol over Ethernet)/
PPPoA (Point-To-Point Protocol over ATM)

Methods of secure data transmission.

Router

A central device that manages the data traffic of your network.

Subnet Mask

A set of four numbers configured like an IP address used to create IP address numbers used only within a particular network.

SSID

See "ESSID."

TCP/IP (Transmission Control Protocol/Internet Protocol)

The standard protocol for data transmission over the Internet.

WAN (Wide Area Network)

A network that connects computers located in separate areas, (i.e., different buildings, cities, countries). The Internet is a WAN.

WECA (Wireless Ethernet Compatibility Alliance)

An industry group that certifies cross-vender interoperability and compatibility of IEEE 802.11b wireless networking products and promotes the standard for enterprise, small business, and home environments.

WLAN (Wireless Local Area Network)

A group of computers and other devices connected wirelessly in a small area.

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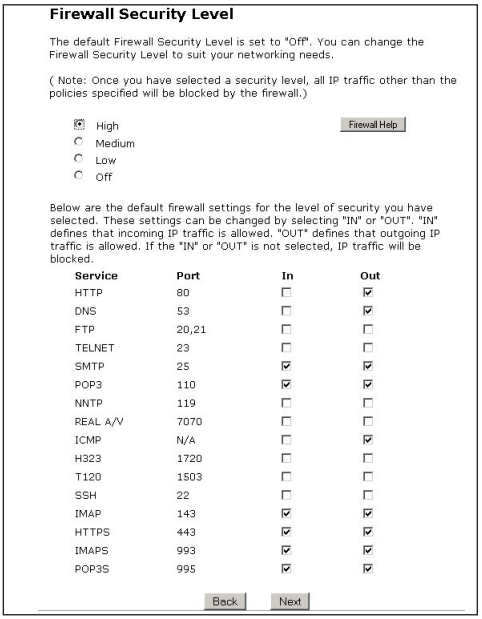
Firewall Security Level Services

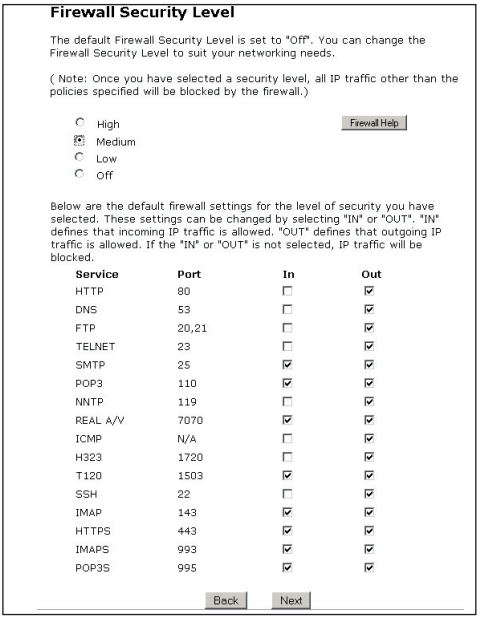
F

This appendix concerns the Firewall options (**High**, **Medium**, and **Low**) section in the "Configuring Advanced Settings" chapter (see page 43). If one of the firewall security levels is chosen in the "Firewall Security Level" screen, a table featuring a list of Internet services and their respective ports appears, along with two configurable columns: "In" signifies whether a particular service can be accessed by a user outside of the network; and "Out" details whether a computer on the Gateway's network can access a particular incoming service. The user can select one of the basic level options, or can manually configure each service by activating and/or deactivating in and out access.

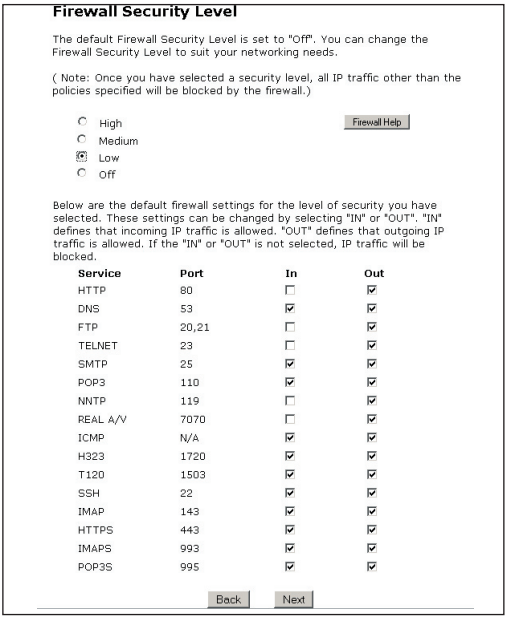

Firewall Security Level
The default Firewall Security Level is set to "Off". You can change the Firewall Security Level to suit your networking needs.
(Note: Once you have selected a security level, all IP traffic other than the policies specified will be blocked by the firewall.)
High
Medium
Low
Off
Firewall Help
Below are the default firewall settings for the level of security you have selected. These settings can be changed by selecting "IN" or "OUT". "IN" defines that incoming IP traffic is allowed. "OUT" defines that outgoing IP traffic is allowed. If the "IN" or "OUT" is not selected, IP traffic will be blocked.
Service Port In Out
HTTP 80
DNS 53
FTP 20,21
TELNET 23
SMTP 25
POP3 110
NNTP 119
REAL A/V 7070
ICMP N/A
H323 1720
T120 1503
SSH 22
IMAP 143
HTTPS 443
IMAPS 993
POP3S 995
Back
Next

For example, if "High" is selected in the "Firewall Security Level" screen (as shown above), the **http** service uses **port 80**. Since the check box in the "In" column is empty, a user outside the Gateway's network cannot access a computer on the network via the http service; in this case, no computers on the network can be used as a Web server (i.e., to host a Web site accessible to outside users). However, since the check box in the "Out" column is checked, all computers on the Gateway's network can access the Internet via the http port.

Medium Security Level


Firewall Security Level
The default Firewall Security Level is set to "Off". You can change the Firewall Security Level to suit your networking needs.
(Note: Once you have selected a security level, all IP traffic other than the policies specified will be blocked by the firewall.)
High
Medium
Low
Off
Firewall Help
Below are the default firewall settings for the level of security you have selected. These settings can be changed by selecting "IN" or "OUT". "IN" defines that incoming IP traffic is allowed. "OUT" defines that outgoing IP traffic is allowed. If the "IN" or "OUT" is not selected, IP traffic will be blocked.
Service Port In Out
HTTP 80
DNS 53
FTP 20,21
TELNET 23
SMTP 25
POP3 110
NNTP 119
REAL A/V 7070
ICMP N/A
H323 1720
T120 1503
SSH 22
IMAP 143
HTTPS 443
IMAPS 993
POP3S 995
Back
Next

Low Security Level


Firewall Security Level
The default Firewall Security Level is set to "Off". You can change the Firewall Security Level to suit your networking needs.
(Note: Once you have selected a security level, all IP traffic other than the policies specified will be blocked by the firewall.)
High
Medium
Low
Off
Firewall Help
Below are the default firewall settings for the level of security you have selected. These settings can be changed by selecting "IN" or "OUT". "IN" defines that incoming IP traffic is allowed. "OUT" defines that outgoing IP traffic is allowed. If the "IN" or "OUT" is not selected, IP traffic will be blocked.
Service Port In Out
HTTP 80
DNS 53
FTP 20,21
TELNET 23
SMTP 25
POP3 110
NNTP 119
REAL A/V 7070
ICMP N/A
H323 1720
T120 1503
SSH 22
IMAP 143
HTTPS 443
IMAPS 993
POP3S 995
Back
Next

Off

If **Off** is selected, only NAT (**N**etwork **A**ddress **T**ranslation) security is active.

Service Acronym Definitions

http

Hyper**T**ext **T**ransfer **P**rotocol. This protocol delivers information over the Internet, and is used when a computer connects to a Web site via an Internet browser.

dns

Domain **N**ame **S**ystem. A data query system used to translate host names into Internet addresses (i.e., www.somewebsite.com translates to 888.999.000.111).

ftp

File **T**ransfer **P**rotocol. A protocol used to transfer files over the Internet.

telnet

An Internet communications protocol enabling one computer to function as a terminal working from another (remote) computer.

smtp

Simple **M**ail **T**ransfer **P**rotocol. A protocol used to transfer E-mail between computers over the Internet. Can be used to send and receive mail.

pop3

Post **O**ffice **P**rotocol 3. Another protocol used to transfer E-mail between computers. Usually employs a pop3 server, and is used to receive mail only.

nntp

Network **N**ews **T**ransfer **P**rotocol. A protocol used to distribute and retrieve news articles over the Internet.

real audio/video

A protocol used to transfer Real Audio or Real Video files.

icmp

Internet **C**ontrol **M**essage **P**rotocol. Allows error messages, text packages, and informational messages to be transferred over the Internet.

H.323

A standard protocol for sending audio and video over the Internet.

T.120

A standard protocol for multimedia teleconferencing over the Internet.

SSH

Secure **Sh**ell. A method for the secure transfer of files from another computer. Also enables remote capabilities (terminal, log in, etc.).

imap

Internet **M**essage **A**ccess **P**rotocol. A protocol for retrieving E-mail messages.

https

Hyper**T**ext **T**ransfer **P**rotocol using **S**ecure Socket Layer. A secure version of the protocol that delivers information over the Internet.

Notices

Regulatory Compliance Notices

Class B Equipment

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by implementing one or more of the following measures:

- Reorient or relocate the receiving antenna;
- Increase the separation between the equipment and receiver;
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected;
- Consult the dealer or an experienced radio or television technician for help.

Modifications

The FCC requires the user to be notified that any changes or modifications made to this device that are not expressly approved by Actiontec Electronics, Inc., may void the user's authority to operate the equipment.

Declaration of conformity for products marked with the FCC logo – United States only.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference

2. This device must accept any interference received, including interference that may cause unwanted operation

Note: To comply with FCC RF exposure compliance requirements, the antenna used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

For questions regarding your product or the FCC declaration, contact:

Actiontec Electronics, Inc.
760 North Mary Ave.
Sunnyvale, CA 94086
United States
Tel: (408) 752-7700
Fax: (408) 541-9005

Miscellaneous Legal Notices

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